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Potential Research Talent in the Sciences
C. GILBERT WRENN

The Financing of Public Higher Education in the United States
H. K. NEWBURN

Colleges, Faculties, and Religion
ALBERT C. OUTLER

JANUARY 1949

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A. J. Brumbaugh, *Editor*

CONTENTS

Contributors to This Issue 4

Potential Research Talent in the Sciences: Based on Intelligence Quotients of Ph.D.'s *C. Gilbert Wrenn* 5

The Financing of Public Higher Education in the United States *H. K. Newburn* 23

Evaluative Procedures for the Improvement of Instruction *James E. Greene* and *Warren G. Findley* 33

Colleges, Faculties, and Religion: An Appraisal of a Program of Faculty Consultations *Albert C. Outler* 45

Leadership through Group Experiences *Ruth Strang* 61

Basic Courses in General Education: With Special Reference to the Humanities Course *Roy Ivan Johnson* 71

The Place of the Community College in a State Educational System *Alva R. Davis* 79

Implementing the Report of the President's Commission on Higher Education: A Case Study for Pennsylvania *Alfred B. Bonds, Jr.* 93

Announcement

The reports of the joint educational conferences sponsored by the Educational Records Bureau, the American Council on Education, and other educational organizations and committees, were issued as supplements to the January number of THE EDUCATIONAL RECORD in the period 1938 to 1947. This procedure has been discontinued. The report of the Thirteenth Educational Conference, held in 1948, entitled *Education for the Preservation of Democracy,* is being published in April 1949 in the American Council on Education Studies, Series I, No. 35, Reports of Committees and Conferences.

Contributors to This Issue

C. GILBERT WRENN, Professor of Educational Psychology and graduate adviser in student personnel work, University of Minnesota, has long been engaged in student personnel research. He is President of the American College Personnel Association, past President of the National Vocational Guidance Association, and a fellow in the American Psychological Association.

H. K. NEWBURN, President, University of Oregon, is a member of the executive board of the NEA and of the American Council's Pacific Coast Committee. He was a member of the President's Commission on Higher Education.

WARREN G. FINDLEY was chief of the Evaluation Branch, Educational Advisory Staff, Air University, from September 1946 to October 1948. He is now head of the Test Construction Department of Educational Testing Service.

JAMES E. GREENE is Professor of Education, University of Georgia, and a fellow of the Social Science Research Council. He has also served as educational specialist for OPA; Director, Veterans Guidance Center, University of Georgia; and Deputy Director, Educational Advisory Staff, Air University.

ALBERT C. OUTLER is Dwight Professor of Theology and Associate Fellow of Silliman College, Yale University. He formerly taught at Duke University. Mr. Outler is a member of the Board of Directors of the National Council on Religion in Higher Education and a member of the United Board of China College Trustees.

RUTH STRANG is Professor of Education at Teachers College, Columbia University, Second Vice President of the Alliance for Guidance of Rural Youth, and editor of *Journal of the National Association of Deans of Women.*

ROY IVAN JOHNSON, Professor of Education, University of Denver, is interested in improved training programs for prospective college teachers. For a number of years he was associated with the development of the Stephens College program. He is author of *Explorations in General Education.*

A. R. DAVIS is Dean of the College of Letters and Science, University of California, Berkeley. He is also chairman of the Academic Senate and of the Committee on Budget and Interdepartmental Relations of the University Library. For eleven years he was chairman of the Department of Botany.

ALFRED B. BONDS, JR. was Assistant Executive Secretary of the President's Commission on Higher Education. Subsequently he served in Paris as consultant to UNESCO, and later was Director of Training, United States Atomic Energy Commission in Washington. He has recently returned to academic life as Commissioner of Education for the State of Arkansas.

The Educational Record

January 1949

Potential Research Talent in the Sciences

Based on Intelligence Quotients of Ph.D.'s

By C. GILBERT WRENN

IN CONNECTION with a project undertaken in the spring of 1948 for the Conference Board of Associated Research Councils,[1] it became possible to examine the general scholastic aptitude test scores of 592 men who hold the Ph.D. degree in the natural (physical, biological, agricultural, and human) sciences. These represented a 62 percent sampling of all men being awarded the Ph.D. degree during the period 1940–47 who had taken their undergraduate degrees in Ohio and Minnesota. The staff of the Office of Scientific Personnel of the National Research Council collected test scores on all science Ph.D.'s for that period who had taken their undergraduate degree in four states where a state-wide testing program was known to exist. Only in Ohio and Minnesota was a single test used which would permit the combination of scores into a single distribution.

[1] The American Council on Education, the Social Science Research Council, the American Council of Learned Societies, and the National Research Council; the work was undertaken by the Conference Board under a grant from the Rockefeller Foundation and carried out through the Office of Scientific Personnel of the National Research Council and the Social Science Research Center of the University of Minnesota.

Before analyzing the findings of this study, it may be well to point out why this investigation was made. For some time there has been a deep concern in the Associated Research Councils for what seemed to be a scarcity of qualified research leaders. Not only is there a current scarcity of research workers, varying in severity from field to field, but the supply of future workers is uncertain. The questions of specific demand in the various fields utilizing scientific research workers, the supply of high-level talent necessary in this field, and the most effective means of recruiting such talent were concerns of the councils. This paper describes a pilot study on supply. Needed research projects on supply, demand, and recruiting were also outlined for the councils and are separately reported elsewhere under the title "Basic Studies on the Supply and Demand of Research Talent."[2]

Considerable attention is devoted in this paper to the relation of the Ph.D. degree to research production. Likewise, this is a study of only the general intellectual aptitude required for the Ph.D. With these two limitations in mind it becomes necessary to make two categorical statements: (1) *There is no assumption that all men possessing the Ph.D. become research workers.* (2) *General intelligence as measured by a scholastic aptitude test is only one, not the sole, aptitude necessary for either Ph.D. training or research production.*

The Nature of High-Level Talent

Advancement in the sciences requires a high level of intellectual performance, that is, the ability to deal with concepts and principles in new and untried ways. Sheer intellectual quality is probably the prime requisite, but other aptitudes or talents are doubtless also involved. There is no disagreement here with the conclusions of the Committee on the Discovery of Outstanding Talent in Youth which are to the effect that our culture requires talents of at least four kinds—verbal, scientific, artistic, and social.[3] The report inveighs against the tendency to over-

[2] To be published in an early issue of *The American Psychologist.*

[3] *The Education of Youth in America* (New York: Bureau of Publications, Teachers College, Columbia University, 1947), pp. 260–68.

emphasize verbal abilities at the expense of the other three. Another committee of this same conference[4] outlines eleven kinds of information that should be recorded as contributing to the identification of these aptitudes or talents. Professor Thurstone in contributing to the conclusions of the main committee presents a fairly similar hierarchy of basic abilities.[5] He places scientific talent (not further defined) first, and follows with social, mechanical, artistic, and verbal abilities. The latter is stated as being central in our educational system, but not necessarily the most important talent.

It is difficult for the present writer to understand what is meant in these discussions by "scientific talent." It is not a known "primary ability" and is apparently thought of as as a composite in which the strictly intellectual is a prime factor. As a matter of fact, Thurstone later on in his report states that the positive intercorrelation of the primary mental abilities is "due in part to an underlying general intellective factor which may be essentially the same as the intellective factor that Spearman identified many years ago." Many talents or aptitudes exist that can be theoretically viewed as distinct functions—social, mechanical, and artistic, for example—but the base factor remains an intellectual one which is perhaps most readily identified as a "management of symbols" factor (verbal and numerical).

If we accept the intellectual component of scientific aptitude as a primary factor, we can then consider the definition of the highest level of formal training of the intellectual component. For the purposes of this report it is assumed that the level of general academic training necessary both to original and applied research functions in the sciences is clearly no less than the Ph.D. or its training equivalent. This is a necessary assumption, although it must be recognized that not all who take a Ph.D. will possess either the necessary level of intellectual ability for original scientific work or the special psychological characteristics required for applied research. From this group, however, will

[4] *Ibid.*, pp. 268-86.

[5] L. L. Thurstone, *The Selection of Talent* (Chicago: Psychometric Laboratory, University of Chicago, 1946).

come the very great majority of those who will perform high-level science functions.

Of the 20,783 persons who received their Ph.D.'s during the decade 1930–31 to 1939–40 and who were employed in 1940, 65 percent were working in institutions of higher learning, 6 percent in other agencies of education, and 29 percent in government and industry.[6] These major groups—education, industry, and government—will continue to draw upon the Ph.D. pool for their top-level research talent. The proportions engaged in the three fields may have changed markedly from those given in foregoing figures. One cue to this is the fact that of the 137,000 persons engaged during 1947 in scientific research, 36 percent were employed in institutions of higher learning, 42 percent in industry, and 22 percent in government.[7]

Intelligence Test Data on Ph.D.'s in the Sciences

The very significant problem of the measuring instrument that may be used to determine basic intellectual ability raises certain questions. For purposes of quick approximation, the assumption is made here that a scholastic aptitude test of sufficient scope will provide the best *single* predictive measure of the most *basic* aptitude necessary for Ph.D. training. There is full awareness of the limitations of the scholastic aptitude test. It is one factor only in the constellation of factors necessary for graduate work. Not all with high scores will do even satisfactory Ph.D. work, but the degree is impossible to secure without a necessary minimum of the quality measured by such a test.

Two types of derived scores are used in the studies that are to be analyzed in this section. Either the percentile rank or standard score based upon a described population is the most satisfactory derived measure for specific populations. It is very difficult, however, to compare such scores on one population with scores on another population unless an intermediate population

[6] *Higher Education for American Democracy: The Report of the President's Commission on Higher Education,* I: *Establishing the Goals* (Washington: Government Printing Office, 1947; New York: Harper & Bros., 1948), p. 87.

[7] *Ibid.,* p. 92.

exists upon which both types of scores are available. The best derived score for our purpose would be from longitudinal studies using the same or equated tests, but these are rare indeed.

The second type of derived score is the intelligence quotient. This term possesses a high degree of emotional coloration for some individuals; but with appropriate attention to the assumptions involved, it is still a valuable measure. The IQ is not as constant as we once thought it to be; we are less certain of the degree of influence heredity has upon it; it does not measure a particularly well-defined psychological trait or traits; it must be used cautiously in connection with group or paper-and-pencil tests. But with a full understanding of such limitations as these, the IQ is a valuable concept for the present study where the identification of a very small segment of a large population is necessary.

In the collection of data previously mentioned, the Ohio State University supplied Ohio State University Psychological Test scores on 66 percent of the individuals who had taken undergraduate degrees in Ohio colleges prior to earning the Ph.D. in the sciences during the 1940–47 period. The University of Minnesota supplied scores on the A.C.E. Psychological Examination, 1937 edition, and other tests equated to this examination, on 61 percent of similar Ph.D.-holders who had taken undergraduate degrees in Minnesota colleges.

All of the Minnesota scores were on the A.C.E. 1937 edition, or had been equated to that edition. The O.S.U. scores were on a number of different forms, and the labor in transmuting them to a common scale proved a formidable task. Because a great deal of information was available from certain University of Minnesota studies on the A.C.E. 1937 edition, it was decided to maximize the data available on the Ohio and Minnesota Ph.D.'s by converting all O.S.U. scores to the A.C.E. 1937 edition, thus distributing all scores on a common scale. After losing a few scores for which no transmutation was possible, this process provided a total of 592 scores—232 Minnesota, and 360 Ohio. The combined total provided a 62 percent sampling of the 995

Ph.D.'s in the natural sciences with baccalaureate degrees earned in the two states.[8]

In terms of raw scores on A.C.E. and percentiles on University of Minnesota *freshmen* norms, the quartile points and other statistics for the two Ph.D. distributions are shown in Table 1. It must be remembered that these data show scores made as high school seniors or college freshmen by those who became Ph.D.'s many years later.

TABLE 1

EQUATED RAW SCORES OF OHIO AND MINNESOTA PH.D.'S ON 1937 FORM OF A.C.E. PSYCHOLOGICAL EXAMINATION, WITH PERCENTILE EQUIVALENTS AMONG THE PH.D. GROUP AND AMONG A COLLEGE FRESHMAN GROUP

(1) Percentile Values in Distribution of Ph.D.'s	(2) 1937 Form of A.C.E., Raw Scores		(3) University of Minnesota Freshman Percentiles of Raw Scores in Col. 2	
	232 Minn. Ph.D.'s	360 Ohio Ph.D.'s	Minn.	Ohio
90 percentile	143	145+	99	100
Q_3 (75 percentile)	121	135	94	98
Median (50 percentile)	103	114	83	91
Q_1 (25 percentile)	85	81	62	56
10 percentile	67	65	35	33

It will be noted that the Ohio distribution is somewhat more negatively skewed than the Minnesota distribution. The two distributions were tested for homogeneity before combining them into one distribution, the statistics of which are shown in Table 2.

There is great advantage in translating raw scores on the A.C.E. into intelligence quotients so that direct comparisons can be made between this group and other groups upon which similar derived scores are available. This was facilitated by Embree's thorough study, made under the direction of Professor

[8] Transmutation of the O.S.U. to A.C.E. scores was made possible through the timely provision by Professor Herbert A. Toops of Ohio State University of data on the conversion of scores of Forms 10 through 20 to Form 21. Dr. Ralph F. Berdie, director of the Student Counseling Bureau of the University of Minnesota, then provided data from a 1942 study on the relationship of O.S.U. scores, Form 21, and A.C.E. scores, 1937 edition. This permitted the transmutation of all O.S.U. into A.C.E. scores.

TABLE 2

A.C.E. Scores on Combined Sample of Ohio and Minnesota Ph.D.'s

Percentile Values in Distribution of Ph.D.'s	1937 Form of A.C.E., Raw Scores
90 percentile	145
Q_3 (75 percentile)	130
Median 50 percentile	106
Q_1 (25 percentile)	81
10 percentile	66

W. S. Miller, which provided a basic equation between 1937 A.C.E. scores and a "midequated IQ."[9] This IQ is the mid-value of five basic intelligence tests which had been administered to each entering class of the University High School of the University of Minnesota for fifteen years.

The principal equation utilized for the present report was one developed by Embree between the midequated IQ and 1937 A.C.E. scores, which in turn were converted into 1937 Stanford-Binet equivalents. All of the individuals upon whom the equation was based—96 males and 82 females of the graduating classes of 1938–40—had midequated IQ's determined at chronological ages below fourteen and one-half years.

With the use of this equation, shown to be be based upon IQ's reasonably similar to IQ's derived from the 1937 Stanford revisions of the Binet Scale, it is possible to convert the A.C.E. scores of the combined Ph.D. groups into midequated IQ's and thence into 1937 Stanford-Binet IQ's. The statistics on the combined Ph.D. population are in Table 3.

Few studies of any kind could be found to check against this distribution of IQ's of a sample of Ph.D.'s. Indeed, it is believed that these figures on IQ distribution, representing two-thirds of all natural science Ph.D.'s in two states over an eight-year period, are unique. Two somewhat comparable studies are cited in succeeding paragraphs.

Embree gives the midequated and Stanford-Binet IQ's of 127

[9] Royal B. Embree, *A Study of the Graduates of the University High School from 1921 to 1945 with Special Reference to Their Subsequent Careers* (Ph.D. dissertation; Minneapolis: University of Minnesota Library, 1947), 574 pp.

TABLE 3

IQ Values at Specified Percentile Points of the Ph.D. Distribution

Percentile Values in Distribution of 592 Ph.D.'s	1937 Form of A.C.E., Raw Scores	Conversion to 1937 Stanford-Binet IQ
90 percentile	145	167
Q_3 (75 percentile)	130	157
Median (50 percentile)	106	141
Q_1 (25 percentile)	81	125
10 percentile	66	115

graduates of the University High School during 1921-42 who were later awarded degrees *beyond* the baccalaureate.[10] The median Stanford-Binet IQ of these advanced degree-holders is 134, just six points above the mean IQ of the 477 University High School graduates who took bachelor's degrees. The 13 Ph.D.-holders in this group had a median IQ of 139, only two points removed from the median of the 592 Ph.D.'s of this study, as shown in Table 3. Reproduced in Table 4 is a portion of Embree's table.

TABLE 4*

Midequated and 1937 Stanford-Binet Intelligence Quotients of University High School Graduates of 1921–42 Who Had Been Granted Advanced Degrees

Degree beyond the Bachelor's	N	Median	Q_3	Q_1	10 Percentile	1937 Stanford-Binet Median IQ
D.D.S.	11	112	117	107	105	115
M.D.	24	124	131	118	111	131
LL.B.	17	127	131	119	116	135
M.A. and M.S.	62	127	134	120	111	135
Ph.D.	13	130	136	127	125	139
All advanced degrees	127	126	132	118	110	134

* From Embree, *A Study of the Graduates of the University High School from 1921 to 1945 with Special Reference to Their Subsequent Careers* (Ph.D. dissertation; Minneapolis: University of Minnesota Library, 1947), pp. 495 and 516.

The published norms on W. S. Miller's Analogies Test for Graduate Students, Form G, show a mean analogies score of 68 for 170 graduate students at the University of Minnesota in 1940–41 who had indicated that they were Ph.D. candidates

[10] *Ibid.*, pp. 495 and 516.

(had not taken their degree or passed their preliminary oral examinations). This, using conversion tables furnished by Miller, yields a mean IQ of 141, exactly the same as the median IQ for the 592 Ph.D.'s appearing in Table 3.

Miller followed up this group, and for 59 individuals in the sciences who had taken their Ph.D. by March 1948, a mean Miller Form G score of 67 and a converted Stanford-Binet IQ of 139 were found, identical with the IQ of Embree's small group. As will be pointed out later, there may be large differences in the ability level of candidates from different fields. If all of the Ph.D.'s from one field (14 individuals) are eliminated from this group, the mean IQ of those remaining rises to 145.

The Supply of Individuals within the IQ Range of the Science Ph.D.'s

Once the basic ability level required to earn the Ph.D. degree is established, as we have tried to do in the foregoing sections, there remains the question of estimating the number of such people available in the United States. In other words, what is the *potential supply* of individuals of appropriate age who are intellectually capable of taking Ph.D. training?

The basic data for this estimate are found in a table prepared by W. S. Miller, of the University of Minnesota. This table is reproduced here as Table 5. Miller makes his calculations from figures provided by Embree's estimate[11] of the percentage of the general population with ability equal to that of the 186,500 recipients of the baccalaureate degree in continental United States in 1940, but projects the study to the 1950 graduates. Professor Miller's comments on the interpretation of the table are as follows:

> In column 4 of the chart the single age group (18) is used as representative of the general population from which college entrants come. This is possible because of the approximate numerical equality of the age group of college entrants. If these age groups were not approximately equal in number, it would be necessary to use as a base in column 4 the sum of numbers of each age group proportionate to their number in the college entrant's group.

[11] *Ibid.*, pp. 340-44 and 527.

TABLE 5

THE ABILITY (ESTIMATED IQ's) OF 187,000 NON-GI RECIPIENTS OF BACCALAUREATE DEGREES, ESTIMATED FOR 1950, IN RELATION TO THAT OF THE ESTIMATED 2,400,000 EIGHTEEN-YEAR-OLDS IN CONTINENTAL UNITED STATES IN 1946

(by W. S. Miller)

IQ*	Sigma Deviations	P.R.'s among 2,400,000 18-Year-Olds	Cumulative Number of 18-Year-Olds above IQ Column 1	P.R.'s among 187,000 Bachelor Degrees	Cumulative Number of Bachelor Degrees above IQ Column 1
148	3.0000	99.865	3,240	99.2	2,592
146	2.875	99.8	4,800	98.1	3,553
144	2.75	99.7	7,200	97.3	5,050
140	2.5	99.4	14,400	94.8	9,700
135	2.1875	98.6	33,600	89.0	20,600
130	1.875	97.0	72,000	80.0	37,500
125	1.5625	94.0	144,000	65.0	65,550
120	1.25	89.4	254,400	50.0	93,500
115	0.9375	82.5	420,000	40.0	112,200
110	0.625	73.4	638,400	25.0	140,250
105	0.3125	62.3	904,800	10.0	168,300
100	0.0000	50.0	1,200,000	5.0	177,650
100	.....	50.0	1,200,000	.....	9,350
Total	.....	.....	2,400,000	.....	187,000

* 1937 revision, Stanford-Binet, mean IQ 100, S.D. 16.

The 2,400,000 in column 4 is an estimate from federal census data of the 18 year old youth in 1946.

The 187,000 in column 6 is an estimate from United States Office of Education reports of the probable number of non-G.I. recipients of the baccalaureate degree in 1950. The number of graduates above each I.Q. level (in column 6) are direct percentages of the 187,000 as read from the percentile rank given in column 5. For example at the 50 percentile rank will be found the figure 93,500 which is one-half of the total of 187,000. At the 89 percentile rank is the figure 20,600 which corresponds to 11 per cent (100–89) of the 187,000.

It is assumed that the distribution of college aptitude in the general population is best represented by the norms established in the 1937 revision of the Stanford Binet Test in which the mean intelligence quotient is 100 and the standard deviation is 16.

The validity of inferences drawn from this chart is dependent upon the accuracy of the estimated percentile ranks recorded in column 5. In an earlier draft of the chart the I.Q. of the median college graduate (col-

umn 5) was estimated from longitudinal studies at 125. After learning that only 85,000 of the 187,500 baccalaureate degrees granted in 1940 were from liberal arts colleges the estimate of the median I.Q. was changed to 120, which is 1.25 standard deviation, (column 2) above the mean of the general population or a percentile rank of 89.4 (column 3). This means that one-half of college graduates have ability comparable to about the best 10% of the general population.

Obviously one cannot be very certain of the estimated P.R., 99.2, of a college graduate (column 5) with an I.Q. of 148. However, studies of gifted children lend support to these upper range estimates.

Let us admit that locating in the general population norms the median aptitude of college graduates is very difficult because of (1) the inadequacy of our measures of college aptitude of either college graduates or the general population, (2) the presence of many other factors related to success in college but not measured by our aptitude tests, and (3) the variation of standards of degree-granting institutions.

Granting all this, the fact remains that results of longitudinal studies made by Benson, Embree and others of students whose I.Q.'s were determined prior to age 15 years lead one to have considerable confidence in the above estimates.

The chart would be materially altered were one to consider graduates only of accredited institutions, or of institutions known to be highly selective in admissions.

The author believes that the estimates in the chart are generous enough to approximate national practices at present. This belief has some support from the report of the President's Commission on Higher Education from which I quote: "At least 32 per cent of our population has the mental ability to complete an advanced liberal or specialized professional education [four years of college]."

According to our chart the lower limit of this 32 per cent would fall at P.R. 68, column 3, which would be a sigma deviation of .47 I.Q. approx. 108, A.G.C.T. approx. 110, and P.R. of about 15 among college graduates, column 5. In other words, one would infer from the chart that 85 per cent of college graduates would qualify for the Commission's 32 per cent of the population with the mental ability adequate to complete the 16 years of liberal arts or technical college.

The agreement of the two estimates is more significant when one considers the different bases for the estimates. The President's Commission utilized Army General Classification Test results in relation to results from the A.C.E., 1942 edition.

Miller states that if only graduates of accredited institutions were considered, his IQ levels (with a median of 120 for graduates) would have to be revised upwards. The following evidence from the studies by Embree and Benson supports his conclusion: Embree's 477 University High School students who took bachelor's degrees had a median Stanford-Binet IQ of 128;[12] Benson[13] reports a median 1937 Stanford-Binet equivalent IQ of 127 for 99 (out of an original population of 1,680 sixth-graders) sixth-graders who received bachelor's degrees.

If, for purposes of tentative investigation as to supply, one took the Q_1 point of the Ph.D.-holders (Table 3), it would be found by entering Miller's table (Table 5) that there were 144,000 eighteen-year-olds with IQ's of 125 and above, and that approximately 65,500 of these can be expected to secure bachelor's degrees. This 65,000 is a potential supply of Ph.D.'s who would have general aptitudes above the lowest quarter of present Ph.D.'s. This is, of course, exclusive of the veteran group now in colleges, all of whom are older than the eighteen-year-old group upon which this estimate was based. *Exclusive of veterans, it includes about one-third of all who may be awarded an A.B. or B.S. in 1950.*

When the proportion at or above the *median* IQ of the Ohio and Minnesota Ph.D. group (IQ=141) is examined in Table 5, only 5 percent of the bachelors are included, or a total of approximately 9,000 individuals. This is at about the 99.5 percentile of the general population of eighteen-year-olds.

There are two major questions to be answered with regard to supply: (1) how many of this potential group may be expected to take advanced degrees or more specifically Ph.D.'s, and (2) how many of the remainder of the reservoir could conceivably be encouraged to undertake training for such degrees? These two broad questions can be broken down into the following working proposals:

[12] *Ibid.*, p. 516.

[13] Viola Benson, "The Intelligence and Later Scholastic Success of Sixth Grade Pupils," *School and Society*, LV (February 7, 1942), 163–67.

1. What proportion of the college graduates of any one year have advanced degrees in general and Ph.D. degrees in particular?

2. If an estimate based upon the answer to (1) is reached, what allowance should be made for the increased college population of veterans whose education has been deferred and who will soon pass out of the college picture?

3. If estimates of size of college population for the future years are made, what variables will make such a college-graduate population different from preceding populations of college graduates in terms of expectancy of graduate work?

One simple approach to the question of what proportion of college graduates have secured the advanced degree of Ph.D. is to examine the census figures on the relationship between advanced degrees and baccalaureate degrees in any one year. If the absolute number of college graduates has held relatively constant over the preceding five years, during which time it could be postulated that a majority of Ph.D.'s would have secured their baccalaureate, the statement of proportion between baccalaureate and advanced degrees could be applied with reasonable validity to the Ph.D. expectancy from any one year's crop of baccalaureates.

This proportion has been found to hold quite constant from the years 1936 through 1942: 15 percent as many secured advance degrees and 1.85 percent as many secured doctoral degrees as secured baccalaureate and first professional degrees for the same period.[14] A total of 3,290 "doctoral degrees" is indicated for the year 1940. It is not known how many of these are Ph.D.'s as opposed to some other degree, except indirectly through knowledge of the breakdown into disciplines by doctoral dissertations accepted in 1939–40 as follows:[15]

[14] *Statistical Abstract of the United States,* 1946, Bureau of the Census (Washington: Government Printing Office, 1946), p. 134.

[15] *Doctoral Dissertations Accepted by American Universities, 1939-40* (New York: H. W. Wilson Co., 1940).

Physical sciences	861
Biological sciences	824
Social sciences	799
Literature and art	388
Earth sciences	101
Total	3,088

Applying these percentages of 15 and 1.85 to the anticipated 187,000 nonveteran baccalaureates in 1950, we could anticipate 28,050 nonveteran advanced degrees and 3,460 doctoral degrees in 1950.

However, the U.S. Office of Education reports that 4,439 doctorates were awarded during the academic year 1948.[16] (A maximum of 3,962 of these can be assumed to be Ph.D. degrees, that is, are in fields where the Ph.D. degree is customary, and about 50 percent of the Ph.D.'s are in the natural sciences.) This is an increase of approximately 36 percent doctoral degrees in 1948 over the anticipated number of *nonveteran* doctoral degrees for 1950 and provides a clue to the effect of the veteran bulge in college enrollment. If one assumed that because of increased income incentive to secure a Ph.D. this 36 percent increase at the doctorate level would increase to 50 percent by 1950, a prediction of 5,290 doctoral degrees can be made for that year.

Another means of estimating the influence of veteran's enrollment upon the total to be awarded Ph.D.'s in 1950 is through the determination of the proportion of the veterans in the total college population in 1947. In 1947 there were 2,354,000 enrolled in institutions of higher education, 854,000 more than in 1940. Of this total approximately a million were veterans.[17] Assuming that all of those in excess of 1947 over 1940, presumably all of whom were veterans, will go forward to baccalaureates and to advanced degrees *in the same proportion* as the normal 1940 and the assumed normal 1950 class, there will be 57 percent more advanced degrees in 1950 than in 1940. This

[16] *Survey of Earned Degrees Granted During the Year Ending June, 1948* (Washington: U.S. Office of Education, August 10, 1948), 5 pp.

[17] *Higher Education for American Democracy*, I, 25.

provides an estimated total of 5,165 doctoral degrees in 1950. Somewhere between 5,000 and 5,500 doctoral degrees in all fields in 1950 seems *the best minimum estimate.* In terms of 1948 estimates above, about 4,700 of these will be Ph.D.'s and about 2,500 in the natural sciences.

These facts on supply are summarized at this point and in Table 6:

TABLE 6

SUMMARY TABLE ON RELATION OF PH.D. DISTRIBUTION TO OTHER GROUPS

Distribution of Ohio and Minnesota Ph.D.'s (N = 592)	Stanford-Binet IQ (1937) Equivalent	Minnesota H.S. Graduates (1938) Equivalent	University of Minnesota Freshmen (1938) Equivalent	Estimated University of Minnesota Seniors Equivalent	Estimated 2,400,000 18-Year-Olds in 1946 Equivalent	Estimated 187,000 Non-GI Graduates (1950) Equivalent	Estimated Number Ph.D.'s 1950 in All Fields and Ability Levels
25th percentile..	125	80th percentile	56th percentile	40th percentile	94th percentile number above = 144,000	65th percentile number above = 65,550	5,000 to 5,500
50th percentile..	141	94th percentile	85th percentile	77th percentile	99.5th percentile number above = 14,000	95th percentile number above = 9,000	

1. If a cut-off score of Q_1 of the Ph.D. group is taken (IQ equal to 125), there were 144,000 eighteen-year-olds in 1946 with intelligence quotients at or above that level. This is the potential for the college graduates from whom Ph.D.'s would come, consisting of the upper 6 percent of the total eighteen-year-olds in the United States. An estimated one-half, or 65,550 of the 144,000, will graduate from college in 1950. This plus the veteran group is our potential for Ph.D.'s. It consists of the upper one-third of all non-GI college graduates.

2. If the cut-off point is taken at the median of the Ph.D. group (IQ equal to 141) only 14,000 eighteen-year-olds would reach or exceed this level as would only 9,000 non-GI college graduates. The college graduates at this level are now over half of the potential, and the reservoir for Ph.D.'s becomes greatly restricted. (See also Table 6.)

The Supply of College Freshmen

The supply available at the *college freshman* level is suggested in an extensive follow-up study of 1948 Minnesota high school graduates by Anderson and Berning.[18] These graduates (75 percent of the total high school graduate population for that year) were given the A.C.E. 1937 edition as part of the state-wide testing program. Figures given by Anderson and Berning indicate that 23 percent of all Minnesota 1938 high school graduates were in college or university in April of the the following year. When the original data were re-examined for use in the present study, only 20 percent of the high school graduates were found to have A.C.E. scores above the Q_1 of our Ph.D. group (IQ of 125) and only 52 percent of this top group were in college in April 1939. This figure was confirmed by a 1946 follow-up of the 1945 high school graduating class where almost the same percentage of women above IQ 125 were in college (48 percent in 1946 as compared to 50 percent in 1939). Because of the pull of the draft the number of men in college that year was greatly atypical and cannot be considered representative.

The not-so-happy ending of this top group of 1938 Minnesota high school graduates is revealed in a final follow-up study of the top 16 percent in either A.C.E. scores or high school rank made by the university in 1947, nine years later. By this time, only 45 percent had received baccalaureate degrees, and 8 percent had earned advanced degrees.[19] In approximate figures, *only 4 percent of the high school graduates with IQ's of 125 and above had earned advanced degrees nine years after high school graduation.* In spite of the fact that the war greatly retarded the normal progress of all high school graduates, this is a poor showing for the educational persistence of

[18] G. Lester Anderson, and T. J. Berning, "What Happens to High School Graduates?" *Studies in Higher Education, Biennial Report of the Committee on Educational Research, University of Minnesota, 1938–40* (Minneapolis: University of Minnesota Press, 1941), pp. 15–40.

[19] Unpublished data made available by Bureau of Institutional Research, University of Minnesota.

the potentially most-able young people. Why do they drop out? What are the factors which determine how many will come through college and go on to advanced degrees?

The socioeconomic factor is certainly significant in determining the proportion of those who attend college. Two studies quoted in Warner, Havighurst, and Loob's volume are pertinent to this question.[20] In a study of 910 children in Pennsylvania with IQ's of 110 and above, a division was made into two groups on the basis of socioeconomic status. In the socioeconomic group, 57 percent attended college, and in the lower group only 13 percent. Another study by Goetsch, as reported in the Warner volume, included 1,023 students who graduated from Milwaukee high schools in 1936 with IQ's of 117 and above. Two years later 94 percent of those whose fathers' income was $5,000 and over were in college, 73 percent of those whose fathers' income was $3,000 and over, 44 percent with fathers' income of $2,000 and over, 27 percent with fathers' income under $1,000. This is economic determinism with a vengeance.

Other studies of similar import are cited in the President's Commission Report.[21] Toops, on the other hand, in his Ohio study found that the vocation of the parent was an important factor in determining the proportion of those who attended college but that sheer economic status was not.[22] He believes that the attitude of the parents toward college-going is the important factor.

The availability and wage level of jobs is another determining factor. There are a little over seven million veterans' educational eligibility certificates as yet (1947-48) unexhausted, and the extent to which these will be utilized depends largely upon the economic status of the country. Job scarcity always has

[20] W. Lloyd Warner, Robert J. Havighurst, and Martin B. Loob, *Who Shall Be Educated: The Challenge of Unequal Opportunities* (New York: Harper & Bros., 1944).

[21] *Higher Education for American Democracy,* II: *Equalizing and Expanding Individual Opportunity,* 13–16.

[22] Herbert A. Toops, "Prediction of College-Going," *School and Society,* LI (March 2, 1940), 257–61.

meant a higher educational enrollment, and this will be particularly true for the veterans if jobs become less easily available than at present or if the gap between possible full-time earnings and the size of subsistence checks is lessened.

With the data at hand it is virtually impossible to estimate how many—beyond the normal expectation of 5,000 to 5,500 in 1950—of the 65,000 potentials might be expected to go on to the doctorate if conditions varied sharply from the present. Considerable attention to incentives and the stimulation of capable individuals to do graduate work is necessary if the flow of high-level talent to the graduate schools is to be increased. Our present knowledge of demand for research workers in the social sciences, natural sciences, and humanities areas is not precise, but enough is known to justify a deep concern over the increase of supply.

The Financing of Public Higher Education in the United States[1]

By H. K. NEWBURN

THE PRESENT CRITICAL international situation emphasizes with startling clarity that our only long-range safeguard against constantly recurring warfare is a sufficient bulwark of individuals so truly educated that collectively they will be able to create a world climate in which man may live at peace with his fellows. While this distant hope must not be permitted to substitute for the necessities of the moment, it does present to our profession—and particularly that segment dealing with higher education—a challenge the like of which cannot be duplicated at any point in our society.

To meet this challenge with any degree of success, the program of higher education must be so organized and administered as to provide the finest possible educational environment for all who are willing and able to profit from such experience. This success will come only if *all* facilities in higher education, public and private alike, are fully utilized, and if blueprints for educational developments are given equal emphasis with plans to prepare the nation for waging war successfully, should war become necessary.

The fiscal objective of higher education is simply that of securing the necessary funds to do the job at hand and *not* that of maintaining the institutions regardless of their effectiveness, as some would seem to propose. The educational institutions have been given the task of meeting the nation's needs for intelligent, competent, and responsible leadership in all aspects of American life, and an adequate budget is an essential element in the satisfactory completion of this assignment.

In 1940 there were listed in the United States 1,751 institutions of higher education, of which 603, about one-third, were publicly supported. Of these, 358 were universities, colleges, or separately operated professionl schools, and the remaining

[1] An address delivered at the annual meeting of the American Council on Education, May 7–8, 1948, Chicago, Illinois.

245 were teachers colleges or normal schools. The public schools enrolled approximately 800,000 students, a little more than 50 percent of the million and a half attending institutions of higher education in that year. Instruction was provided by a staff of over 62,000 men and women, about 47 percent of the full-time faculty members in higher education that year (131,-552).

Of the $522,000,000 spent in 1940 for current operations, $269,000,000, or 52 percent, was expended by those schools under public control. In 1947 total expenditures in higher education had increased to approximately $1,000,000,000, of which $526,000,000, or 52 percent, represented the outlay of the public institutions. The publicly supported schools turned almost exclusively to student fees and government sources for support, with about twenty cents of every dollar spent coming from student fees, and sixty-eight cents from public funds divided as follows: about fifty cents from state governments, ten cents from the federal government, and eight cents from local agencies. Only four cents of every dollar of income was philanthropic in origin. Postwar developments have changed this picture considerably and temporarily, since it is estimated that more than 38 percent of the income for publicly supported institutions in 1947 was derived from student fees ($202,000,000), of which almost two-thirds ($129,271,000) came from the federal government as payment for veterans' tuition. It should also be noted that the publicly supported schools hold only 10 percent of the $2,000,000,000 in productive endowment funds owned by institutions of higher education.

We are to discuss, then, the financing of some six hundred publicly supported institutions which before the war enrolled slightly more than half, and today almost two-thirds, of the students; which employed in 1940 a little less than half of the teaching staff attached to institutions of collegiate grade, and which spend just slightly more than half of the current annual operating budget for higher education. These schools depend very heavily upon public sources and student fees for income, with well over two-thirds of their total resources derived from the former and about one-fifth from the latter source. During

the present period of heavy veteran attendance, fee income has increased considerably, with almost two-fifths of the total budget derived from this source, a great portion from the federal government in the form of payment for veterans' tuition.

Now to turn to an analysis of the financial problems faced by these publicly supported institutions of higher education as they attempt to meet their responsibilities in the years immediately ahead.

First, *there is little justification for anticipating a permanent leveling-off of enrollments in higher education at the prewar level, even though there may be a temporary lull in increases or even a slight decrease in registrations during the next few years as the veterans move out of the picture.* However, if all qualified and interested youth are given the opportunity to attend college, a considerable increase over the present high enrollment figure must be expected and planned for. College enrollments have moved steadily upward in recent years until in 1940 about 16 percent of the eighteen- to twenty-one-year-olds was in attendance. A continuation of the prewar enrollment trends indicates a registration of between 2,900,000 and 3,000,000 students in 1960, approximately 25 percent of the eighteen- to twenty-one-year-olds at that time. At the other extreme, the President's Commission on Higher Education has suggested, if proper conditions are provided to encourage enrollment, the institutions must be prepared to care for not less than 4,600,000 in 1960, of which 4,000,000 will be enrolled at the undergraduate level. This would mean half of the eighteen- and nineteen-year-olds and one-third of the twenty- and twenty-one-year-olds would be in attendance along with approximately 600,000 older graduate students. The most conservative estimate seen by this speaker was made recently by a committee of the National Conference on Higher Education when this group reduced its estimate of last year from a prediction of 3,000,000 to 2,500,000 students in 1960, but even this conservative prediction exceeds the 1940 registration by one million and is somewhat higher than the enrollment in the fall of 1947, which included about a million overage veterans.

In the second place, *it is obvious that any further expansion*

in enrollment over the prewar levels must be cared for largely, if not wholly, by the institutions under public control. Actually, this has happened during the recent period of rapidly expanding enrollments. While the public schools almost doubled their registration between 1940 and 1947 (800,000 to 1,500,000), the private institutions during this same period expanded only from approximately 700,000 to an estimated 900,000 students. Some private colleges and universities emphasize that even this expansion must be considered as temporary in nature, and that they hope at the earliest possible moment to return to prewar enrollment levels. This desire is understandable on practical as well as philosophical grounds since in most cases each enrollee pays half or less of his educational costs, and the remainder must be made up from other sources which are definitely limited in nature.

It has been estimated (President's Commission) that if the privately operated institutions continue their present enrollment of about 900,000 students, assess average tuition fees of $300 per year, and double their prewar income from gifts ($100,000,000 in 1940), they will barely balance their budgets if they maintain an adequate program in the years ahead. Under such circumstances these institutions cannot be expected to take on greater obligations. This means, therefore, that the public schools must be prepared for an enrollment of not less than 1,600,000 in 1960 and possibly for as many as 3,700,000, depending upon the basis of prediction, as compared with about 800,000 in 1940. This obligation must be met if the nation is to realize in practice the objectives inherent in the establishment of a comprehensive program of *public* higher education.

Third, since the publicly supported institutions must not only provide for greater numbers but at considerably greater unit costs, *the annual budget for public higher education in the years ahead will be much greater than anything experienced prior to the war.*

Careful estimates made by the President's Commission on Higher Education indicate that it will cost at least $562 per pupil to provide an adequate program in 1960, as compared with an average of $338 for the public schools in 1940, and

an estimated average of approximately $500 per pupil for all institutions in 1947. This means an annual cost in 1960 for current operations in the publicly supported institutions varying from $1,138,000,000 for an enrollment based on a continuation of prewar trends, to $2,000,000,000 for the enrollment predicted by the President's Commission. This cost is four to seven times the cost of public higher education in 1940, and two to four times the cost of *all* higher education in that year.

In addition, the public institutions will face during the next few years heavy expenditures for capital outlay to rehabilitate present stuctures and to construct the new buildings necessary to care for larger enrollments. If it is assumed that the prewar average of 155 square feet per student is to be maintained—and some authorities believe this is inadequate—the publicly supported institutions will need a total of well over 300,000,000 square feet of additional floor space by 1960. Indications are that provisions have already been made to acquire over 140,000,000 square feet of this space, thus leaving a total of about 270,000,000 square feet to be provided. At an estimated cost of $18 per square foot, this will require an expenditure of approximately $3,000,000,000 by 1960, or about $300,000,000 annually for the decade 1950 to 1960. If the same assumptions are made for the maximum predicted enrollment, the total expenditures will be approximately $7,000,000,000, or about $700,000,000 annually during the decade. The publicly supported institutions, therefore, will require an annual budget in 1960 varying from approximately $1,450,000,000 for 2,000,000 students, to $2,700,000,000 for 3,700,000 students.

Fourth, *the proportion of the income realized through the assessment of fees in the publicly operated institutions cannot be increased.* This nation has always depended rather heavily upon the student and his family for the direct support of higher education through the collection of fees; and while the tuition levels in the publicly operated schools have been considerably lower than in the private colleges, about one-fifth of the income in such institutions normally is derived from this source. Since fees are flexible in nature, they tend to be increased when there is need for additional income and when other sources do not

provide sufficient funds. The average increase in fees from 1938 to 1946 was 28 percent, and in some areas of education they have become so high as to raise serious question relative to the economic barrier they are helping to create. In medicine, for example, the average annual fee charged by the public institutions to resident students was $331 in 1946. Add to this room and board charges, the cost of books, equipment, supplies, and other incidental expenses, and there is created an almost insurmountable obstacle to many qualified individuals. When it is kept in mind that half of the children under eighteen years of age come from families with incomes of $2,530 or less, the problem is made more evident. Considerable evidence is available to indicate that as many as half of those with ability to profit from higher education may be denied such opportunity because of low family income combined with high educational costs.

If education in the publicly supported institutions is to be made available to all qualified youth regardless of economic status, it is evident that increases in student fees should not be contemplated but that, rather, efforts should be directed at the elimination of the barriers caused by the already high charges in many areas. The President's Commission, for example, proposes the elimination of all fees in the public institutions through the fourteenth grade and the rolling back of fees at upper levels to the 1939 average of approximately $105 per year. If this were done, a considerably smaller proportion of the budget for the publicly supported institutions would come from fees in the future.

Fifth, *it appears quite likely that between eighty and ninety cents of every dollar expended by the publicly supported institutions in the future must come from public funds.* This means, even on the basis of minimum enrollment predictions, major increases in allocations to higher education from state and national governments.

Total direct public allocations in 1960 will vary from one and a half to two and a half billion, depending upon the enrollment assumed, or eight to thirteen times the income from such sources in 1940.

While it is evident that both the states and the federal government must make considerably greater grants in direct support of higher education, the relative contribution to be made in each case is not readily determined. Not only must the comparative ability of the states and the federal government to participate be considered, but also the basic assumptions around which such support should be established. Any plan for state and federal participation must recognize that education is definitely the responsibility of the states and that nothing should be done to deprive them of control over the educational program. On the other hand, it is increasingly clear that the nation as a whole cannot remain uninterested in what is happening to the youth of the country who are in attendance at the schools of higher learning within the various states. Somewhere within the framework of these two considerations, then, lies the general basis for considering the amount and character of the contribution to be made by the federal and the state governments.

This writer believes firmly that each state should make the fullest possible effort to support its educational program before turning to the federal government for assistance. It is a great temptation today in all areas of activity to request the federal treasury for help when financial difficulties are encountered, but every effort should be made to guard against succumbing to such temptation in the case of support for higher education. In 1940 the median state invested directly only .3 percent of its income in higher education, and only seven states provided as much as .5 percent. Certainly it does not seem unreasonable to expect the state to devote one two-hundredth of its income in support of public higher education. If this had been done in 1947, $1,000,000,000 would have been made available from this source, which approximates the total cost of higher education, public and private, in that year. It is proposed, therefore, that as a rule of thumb, the states contribute .5 percent of their income annually to higher education, and that the remainder of the public grants, except for a small amount to come from local governmental agencies, be contributed by the federal government.

There are additional reasons for emphasizing relatively heavy

participation of the states in the support of higher education. As was mentioned, the extremely large expenditures to which the federal government is already committed indicate that only the minimum essential aid to higher education can logically be expected in the years immediately ahead. Entirely apart from the feasibility of securing such assistance, however, is the necessity of requesting the federal government to provide considerable aid at other points in support of higher education. It is estimated, for example, that between $100,000,000 and $200,000,000 annually will be required for a nation-wide scholarship and fellowship program designed to aid the competent individual possessed of inadequate means in his efforts to secure an education. Such an investment, which is essential to counteract the influence of high educational costs even in the public institutions, will vary from small amounts in some cases to as much as $1,500 annually, depending upon the program the student is carrying, and can be supported only with major grants from the federal government to supplement the contribution of those states able to provide funds for this purpose. Only if such a program were in operation would it be possible to justify continuation of the present tuition fees at all levels in the publicly supported institutions. Such grants should be administered by the states and should go to the individual student to be utilized at any accredited institution to which he can secure admission. To the extent possible, the recipients should be required to demonstrate that they are helping themselves to the utmost as a concomitant to such supplementary assistance.

Furthermore, the federal government will undoubtedly wish to add to its support of institutional research and to the present program of purchasing services essential to the general welfare of the nation. The necessity of encouraging basic research in the natural sciences is clearly recognized, but it is equally important that the nation realize the necessity of promoting search for truth in those areas where value-judgments motivate and guide human conduct. The amounts which could be utilized in such endeavors are practically unlimited. If we are to secure adequate assistance from the federal government in support of scholarships and research, the direct and general support of

higher education must be kept to the minimum consistent with the maintenance of an adequate program of higher education throughout the nation.

On the other hand, the great variations existing in the ability of the various states to provide adequate support for higher education cannot be ignored, and this factor alone makes it imperative that federal funds be made available to equalize educational opportunity among the various states. While such aid probably should be provided to all states, it should be distributed on the basis of need under the assumption that such assistance, along with a national scholarship and fellowship program, will go far toward lowering, if not eliminating, the present economic barrier to higher education.

The writer believes enrollment in institutions of higher education will be nearer to 3,000,000 than to 4,600,000 in 1960, even with the encouragement of free tuition in grades thirteen and fourteen and the possible stimulation of a comprehensive scholarship and fellowship program. This means that the publicly operated institutions will have an enrollment of approximately 2,000,000 students and will need an annual budget of approximately $1,450,000,000. The total income from philanthropy, fees, and miscellaneous sources will be less than $200,000,000, leaving almost $1,250,000,000 to come from public funds. If the states provided $1,000,000,000 of this amount by allocating one two-hundredth of their income to higher education, the federal government will be required to provide approximately $300,000,000 annually in general support. If modest fees were retained in grades thirteen and fourteen as well as at the upper levels, the federal contribution could be reduced to approximately $200,000,000 annually. While $300,000,000 does not seem large in these days, it should be kept in mind that only in recent weeks has Congress become seriously interested in proposals for the granting of $300,000,000 annually to the elementary and secondary schools, where the problem is even more critical than at the higher level.

It hardly seems necessary to mention that serious difficulties will be encountered in efforts to secure the increases suggested in allocations from the various state legislatures to support higher

education. While an investment of $1,000,000,000 annually represents a small fraction of the total income of all persons, such a sum would be an increase of approximately $850,000,000 annually over the 1940 allocations by the various states to higher education. With all the competition existing today for state funds, it will be necessary for the responsible leaders in higher education to present the fiscal needs with clarity and intelligence along with a clear-cut picture of the contribution of education to the general welfare of the respective states and the nation.

It is impossible, therefore, to predict an easy and comfortable future for the public institutions of higher education in this country. If they are to make their potential contribution to the welfare of the nation, they must not only take care of larger numbers of students, but also at the same time improve the quality of their product. If the qualitative aspect of the program is to be upgraded, the budget for higher education must be greatly increased. If additional funds are to be obtained without at the same time erecting still higher barriers to education on economic grounds, they must come largely from public sources. This means considerably larger annual grants on the part of the federal, as well as the state, governments in the general support of higher education. It means, further, that the federal government must aid the states in the elimination of economic barriers through the provision of relatively large sums for nation-wide scholarship and fellowship programs to be administered by the states. The states, on the other hand, must devote a larger share of the total state budget to higher education in recognition of the social importance of this major public activity.

This nation is facing an interesting and serious dilemma. Believing as we do in the possibility of peace among all mankind, we are at present concentrating heavily on all-out preparation for war. We must not permit such efforts, necessary though they may be to the welfare of the nation, to cloud our vision or to turn us from our belief that the only true hope of mankind lies in the improvability of the individual. To this end the nation must consciously direct its efforts, and the colleges and universities of the land must continuously dedicate their full energies.

Evaluative Procedures for the Improvement of Instruction

By JAMES E. GREENE and WARREN G. FINDLEY

THIS PAPER is one of a projected series[1] dealing with the educational programs of the United States Air Force's newly established Air University. It is the present concern of the writers to describe briefly and appraise critically an approach to the improvement of instruction by means of appropriate evaluative procedures. Although the descriptive materials refer specifically to conditions obtaining in Air University, an attempt will be made to point out possible implications of this approach for civilian institutions of higher learning.

In order to make more meaningful the viewpoints and materials to be presented, an attempt will be made to describe briefly the setting in which the evaluative procedures to be discussed were employed.

Air University is a newly created institution of higher learning operated since 1946 as a separate command of the United States Air Force to provide advanced professional training in five constituent schools for commissioned officers from the time of commissioning to the time of retirement. All commissioned officers attend its lowest school; the higher schools are attended by selected quotas. During 1947–48 the officers attending the five constituent schools numbered about three thousand, ranging in rank from second lieutenant to general officers. The faculties consisted of about three hundred instructors—predominantly military personnel with little previous training or experience as instructors.

The military and civilian authorities responsible for planning

[1] Other papers in this series which have been published include the following: James E. Greene, "The Evaluation of Instruction in Air University," *Journal of Psychology*, XXV (1948), 279–97; Hugh F. Seabury and Kenneth R. Williams, "Air University Trains Instructors," *Higher Education*, IV (September 15, 1947), 15–18; Kenneth R. Williams and Alder M. Jenkins, "Improving Instruction in Institutions of Higher Education," EDUCATIONAL RECORD, XXIX (April 1948), 145–61.

of Air University early decided to attach to it a corps of professionally trained educators, to be designated an "Educational Advisory Staff," who would serve in an advisory and technical capacity to the Commanding General and, through him, to the commandants of the several schools and the members of the several faculties. Although the Educational Advisory Staff has a variety of duties, this paper is confined to a discussion of certain activities which have particular significance for the improvement of instruction by means of appropriate evaluation procedures. These activities include the offering of a limited amount of regularly scheduled course instruction in evaluation to members of the instructional staffs and systematic provision of specialized advisory and technical services to the administrative, supervisory, and instructional staffs.

Analysis and Description of the Approach

As it gradually developed in the above-described setting, the approach to the improvement of instruction by means of appropriate evaluative procedures had several facets. Although they cannot be isolated as separate entities, for purposes of analysis it may be said that the approach with which the present paper is concerned consisted of three fairly distinct activities or emphases: (1) the development of an over-all philosophy concerning the role of evaluation in the improvement of instruction; (2) a conceiving and structuring of the organization and functions of the Educational Advisory Staff as a means to the end of improving instruction through appropriate evaluative procedures; (3) the development of a philosophy and pattern of operational procedures for securing maximum effectiveness in the *advisory, instructor-training,* and *technical-service* functions of the Educational Advisory Staff. Each aspect of this approach will be described briefly.

Perhaps the most crucial aspect of the approach consisted of the formulation of an over-all philosophy of evaluation as it should function in the particular setting of Air University. This conception of the role of evaluation in the improvement of instruction stemmed from a detailed analysis of the basic, con-

stituent elements in effective instruction. As viewed by the Educational Advisory Staff, instruction is likely to be effective in proportion as: (1) Each objective of instruction is clearly conceived and fully accepted by the learner and is uniquely appropriate to his needs, abilities, and interests; (2) each of the learning situations comprising the educational program (teacher and pupil activities, materials, methods, and the like) is nicely adapted to the rapid and effective development of one or more of the objectives of instruction; and (3) teacher and learner each constantly secure, analyze, and interpret evidences concerning the extent to which *each* objective of instruction has been achieved.

This point of view concerning the nature of effective instruction has important implications for the role of evaluation in the improvement of instruction. Thus conceived, evaluation obviously is an integral and inherent part of the effective instructional process. For example, in the absence of reasonably valid evaluations concerning the abilities, needs, and interests of learners, it is not possible to determine objectives of instruction uniquely appropriate to that learner. That is, evaluations should *precede* instruction as well as *follow* instruction.[2]

Similarly, the choice or development of particular learning situations as vehicles for the attainment of particular objectives involves not only a continuing evaluation of the learner, but of external considerations as well. However, despite these important aspects of evaluation as initial and intermediate constituents of the effective instructional process, major emphasis traditionally has been given to evaluation as the culminating or terminal activity in the instructional process. These terminal evaluations are routinely used for purposes of determining marks, class standing, and eligibility for promotion to advanced classes or graduation. It is here held that these terminal evaluations, when properly conceived and used, also lend themselves to sig-

[2] These evaluations which precede instruction presumably should include not only measures of previous learnings; they also should include measures of scholastic ability, vocational interest, and other data commonly provided by a well-conceived testing and counseling program.

nificant appraisals of the appropriateness of the objectives and the instructional procedures employed. Conversely, poorly conceived or technically deficient evaluation devices may negate good instruction and even create serious problems of morale.

The attempts to implement this philosophy of evaluation in Air University have taken many forms. In all cases an effort has been made to relate these activities to the facilities and circumstances obtaining in the local situation. Particular attention has been given to the full utilization of the organization and functions of the Educational Advisory Staff in implementing this philosophy. For example, in connection with the *advisory* functions of the Educational Advisory Staff as operative at the higher military echelons where major educational policies are formed, the impact of this viewpoint has manifested itself in the formulation of standard operating procedures and the issuance of directives relating to educational policy and procedure.

As a result of the acceptance of this philosophy at the headquarters and commandant echelons, members of the instructional staffs are directed to consult the Educational Advisory Staff concerning the planning, construction, administration, and revision of evaluative instruments and procedures to be employed for given units of instruction and for other purposes. It is to be emphasized, however, that the Educational Advisory Staff does not have, and scrupulously avoids the appearance of having, any line authority. Consequently, the chief and final responsibility for evaluation rests with the administrative and instructional staffs rather than with the Educational Advisory Staff. This policy reflects that portion of the over-all philosophy of evaluation which insists that it is neither possible nor desirable to divorce evaluative functions from administrative and instructional functions.

Perhaps the most comprehensive impact of this approach to evaluation is found in connection with the *instructor-training* functions of the Educational Advisory Staff. Members of the staff offer six hours of instruction in evaluation in an instructor-training course which headquarters' directive requires each regular instructor to complete. The purpose of this instruction is to

develop understandings concerning the role of evaluation in the improvement of instruction and to develop minimal skills in the construction and use of various types of tests and other evaluative instruments. This formal instruction is supplemented by informal instruction in connection with the performance of the advisory and technical-service functions of the staff.

Since most members of the instructional staffs have had relatively little training or experience in the technical aspects of evaluation, it early became evident that the maximum implementation of our philosophy of evaluation would require the Educational Advisory Staff to perform a variety of *technical services*[3] at the request of the administrative and instructional staffs.

Another significant facet of the approach involved systematic efforts to develop harmonious and effective working relationships with members of the administrative and instructional staffs. In this connection it is well to recall that the Educational Advisory Staff has no line authority. By deliberate intent its advisory and technical services are available on a voluntary basis. Only a few of its members have had military experience or previous experience in military instruction. Many circumstances dictated the desirability of developing the evaluation program along lines which would insure its genuine acceptance. Both as a matter of principle and as a matter of expediency, the Educational Advisory Staff from the beginning adopted the deliberate tactic of giving prompt and serious consideration to every request for advisory, instructional, or technical assistance—however trivial or superficial that particular request might appear to be as compared with other requests which might equally well have been

[3] The nature of these technical services varied from one situation to another. In situations involving instructor-made objective examinations these technical services commonly involved calculations of measures of the difficulty and validity of individual test items; analyses of the effectiveness of alternatives; assistance in the revision of alternatives and in rewording the stems to statements; and assistance in the construction of new items to replace items shown to be faulty. In other situations these technical services took the form of providing assistance in the construction of rating scales and other specialized evaluative instruments; determining the specific prognostic values of a given test or battery of tests; and so forth.

made. This practice was pursued in the light of the following beliefs: that "outside" professional assistance in the improvement of instruction will be helpful in proportion as it is earnestly desired; that such assistance will most likely be initially requested about problems of immediate interest over which some real concern is felt but with respect to which the instructor feels no threat to his basic security by requesting outside professional assistance; that if the assistance requested is promptly obtained and contributes to, rather than threatens his sense of security, the instructor will be increasingly able to sense, and to seek assistance concerning problems of increasingly crucial importance; that any real problem on which the instructor genuinely desires assistance, however relatively unimportant it may be as compared with other problems which he fails to sense or is unwilling to present, provides an opportunity for the consultant to establish effective rapport and, by adroitly pointing out the larger implications of his immediate problem, lead the instructor to an enriched conception of his over-all tasks.

Space considerations preclude the presentation here of the many instances which could be cited in support of the evident soundness and limited empirical validation of the operational procedures stated or implied above. It may be summarily stated, however, that these operational practices apparently have led to constantly increasing requests for the various specialized professional services of the Educational Advisory Staff. Furthermore, it is our distinct impression that these practices have been accompanied by an enhanced sense of professional security and enriched conceptions of teaching and learning on the part of the administrative and instructional staffs.

Tentative Appraisal of Three Evaluative Techniques

The above-described approach to the improvement of instruction has provided many opportunities for formal or informal appraisal of the basic assumption that it is possible to improve instruction by means of appropriate evaluative procedures. For

purposes of illustrating the types of appraisal to which this approach has been subjected, it is proposed here to appraise briefly three illustrative subassumptions that instruction can be improved by means of (1) improving objective test items, (2) improving the measurement of intangibles, and (3) utilizing student evaluations.

The philosophical justification for the belief that improving individual test items should result in improved instruction may be stated in a series of postulates, as follows:

1. It is impossible to plan effectively for the improvement of instruction except when such plans are based on careful and exact studies of the present successes and failures of instruction.
2. Teacher-made tests commonly constitute one of the most valid sources of data concerning the effectiveness of instruction.
3. The data concerning the successes and failures of instruction as revealed by teacher-made tests will be valid only in the proportion that the individual items comprising such tests are valid.
4. Concern by the instructor with the validity of individual items of a test tends in time to develop greater instructor concern relative to the appropriateness and clarity of the objectives of instruction and the appropriateness of the instructional procedures employed in attaining these objectives.
5. Thus, in practice, instructor concern about the improvement in the measurement of student learnings not only results in improved measurement of the efficiency of instruction *per se;* it tends also to promote improved objectives of instruction and improved instructional procedures.

A previous paper[4] has presented considerable objective data showing a measurable and statistically significant improvement in objective test items as measured by increased validity coefficients and by an improved "functional content"[5] of test items on successive tests in the same area of instruction. The writers have been equally impressed by certain subjective types of data

[4] Greene, *op. cit.*

[5] The emphasis on "functional content" consisted of attempts to develop test items of such a functional nature that successful performance by the examinee in the test situation could be assumed to correlate highly with his successful performance of military duties in a routine situation.

which appear to indicate that improved validity coefficients and improved functional content of test items usually have been paralleled by concomitant evidences of generally improved instructional practices. For example, increased validity coefficients have generally been accompanied by (*a*) increased "face validity" of tests; (*b*) enhanced student satisfaction with the "fairness" of tests; and (*c*) an increasingly critical and intelligent concern by both instructors and students relative to the appropriateness of the objectives of instruction and the appropriateness of the instructional procedures employed.

The objective and subjective data available have also led us to conclude that the emphasis on improving the functional content of examinations has not only resulted in a more valid appraisal of instruction *per se,* but it also has tended to improve the functional quality of instruction itself. Such a finding should occasion little surprise. Alert instructors have long known that students tend to "point" for tests and to distribute their study emphasis accordingly. It is perhaps not so commonly recognized that instructors likewise point for tests by consciously or unconsciously shaping the objectives and techniques of instruction in terms of the types of appraisals which they expect to make.

The special functions of the several schools in Air University are such as to place marked emphasis on various "intangible" learnings as important objectives of instruction. The payment of "lip service" to these intangible objectives is not an uncommon practice; however, since adequate appraisal of such objectives usually imposes many practical and technical difficulties, it is also a not-uncommon practice to neglect or omit these intangible outcomes in an evaluation program. In every facet of the above-described approach a deliberate attempt has been made to utilize the advisory, instructor-training and technical-service functions of the Educational Advisory Staff in insuring that these intangibles receive attention in the evaluation program in proportion to their importance.

Several types of evidence may be cited in support of the view that emphasis on the improved measurement of intangibles actually resulted in improved instruction. For example, the Cur-

riculum Planning Boards (made up of instructors with official responsibility for recommending curriculum revisions) have in many instances requested divisional heads and/or instructors to *(a)* restate their objectives of instruction to provide additional instruction better designed to result in the attainment of the given intangible objectives; *(b)* provide additional and improved hours of instruction pointed toward given intangible objectives. Also, individual instructors informally report that emphasis on the appraisal of intangible outcomes has resulted in a reconsideration of the general and specific purposes of particular units of instruction and in efforts to readjust instructional procedures in the light of these purposes. For example, there has been a marked shift in emphasis from stressing knowledge outcomes (often conceived of in terms of the mastery of isolated factual information) to a stressing of thought and judgment outcomes (conceived of as the ability to recognize problems, to analyze problems into their constituent parts, to locate and properly interpret significant data, and to arrive at valid conclusions). These changed value-judgments concerning the purposes of instruction usually have been accompanied by a decreasing emphasis on the lecture method and an increasing emphasis on the effective use of discussion and seminar procedures. The intangible interpersonal factors involved in staff work have been given increased emphasis as a result of effective evaluative procedures developed in the several schools.

The justification for utilizing student appraisals in the evaluation program of Air University rests on several considerations. Headquarters takes the official attitude that each student in Air University as a mature, career officer is actually or potentially interested in (*a*) personal and professional self-improvement through formal study, (*b*) improvement of the total instructional program of Air University. In this newly established educational agency it is found that the background of military training and experience of the student body typically approximates closely that of the instructional staff. Partly as a result of this circumstance (but also consonant with the philosophy of evaluation herein described), a corollary official attitude maintains that

the student, as the recipient of instruction, stands in a peculiarly strategic position to make functional and pertinent appraisals of general and specific aspects of the instructional program to which he is subjected. The extent to which, and certain procedures through which, this philosophy has been implemented in the various courses in Air University have been presented in a previous paper in this series.[6]

Although the supporting data will not here be cited, impressive evidence exists that these student appraisals of instruction have been and are being used by individual instructors and by faculty boards as one basis for significant revisions of instructional objectives and instructional procedures. In addition to the inherent validity of these student appraisals for purposes of improving the objectives and procedures of instruction as such, it is believed that the emphasis on student appraisals has equally important mental-hygiene implications. To be accorded the status and responsibility of partnership in a meaningful educational enterprise appears to facilitate a feeling of belongingness and identification on the part of students which promotes good general morale, harmonious student-faculty relationships, and effective learning. To provide a wholesome and useful outlet for the emotional tensions commonly incident to a rigorous program of military instruction is no mean attainment: in so doing also to release hitherto untapped reservoirs of energy and skill for purposes of improved instruction and enhanced personal adjustment constitutes outcomes the importance of which it is difficult to appraise fully.

Implications for Civilian Institutions

Although Air University's program of evaluation of instruction was initiated only recently and is still undergoing revision and expansion, experience to date would appear to have implications for civilian institutions of higher learning. It has been demonstrated that when properly approached and provided on a voluntary basis with advisory and technical assistance, the rela-

[6] Greene, *op. cit.*

tively inexperienced and professionally untrained military instructors of Air University show remarkable interest and skill in improving their proficiency in the evaluation of instruction. Since many instructors in civilian institutions of higher learning likewise have had relatively little professional training in the evaluation of instruction, it seems reasonable to assume that these civilian instructors would show similar patterns of improved interest and skill in evaluating instruction if they were stimulated to do so through an alert and vigorous educational leadership. Such nominal leadership in many instances will need to be supplemented by special provisions for advisory and technical assistance. On many campuses there is undoubtedly an untapped reservoir of latent advisory and technical skill which imaginative supervisory officials should be able to utilize in the improvement of instruction by means of one or more of the evaluative emphases herein described, or by such other evaluative activities as might be uniquely appropriate to local conditions and needs.

It is not within the scope of this paper to suggest in specific detail the precise ways, if any, in which a particular civilian institution could inaugurate or expand its own approach to the improvement of instruction by means of emphasizing appropriate evaluative procedures. Such local planning obviously would need to take into account the tradition, personalities, facilities, and needs obtaining in the given local situation. However, it would seem likely that any centralized, campus-wide approach would likewise need, in terms of its own situation, to give consideration to (*a*) the development of a local, over-all philosophy concerning the role of evaluation in the improvement of instruction; (*b*) the structuring of the organization and functions of a particular local agency or agencies to serve as means to the end of improving instruction through appropriate evaluative procedures; (*c*) the development of a philosophy and pattern of operational procedures of such local agency or agencies so designed as to insure maximum functional efficiency of the evaluation program. The writers are impressed that an ill-conceived or maladroitly implemented program of evaluation might not simply fail to improve instruction in the amount or direction desired; because

of the direct and indirect pervasive and coercive influence which evaluative practices tend to exert upon instructional objectives and instructional procedures, such a program of evaluation actually might hinder, rather than improve, instruction. The fact that college instructors as a group often fail to recognize or admit a lack of competence in evaluation poses further difficulties in the application of ideas advanced here and underlines the importance of wise planning and strategy in introducing advisory service in evaluation with a view to improving instruction.

Colleges, Faculties, and Religion

An Appraisal of a Program of Faculty Consultations

By ALBERT C. OUTLER

HIGHER EDUCATION IN AMERICA is in process of an unparalleled expansion, and yet American educators are in a ferment of unparalleled discontent. Over the past decade, and even more intensively in the postwar years, we have had an unwearied and almost universal act of contrition from men and women in the American academic community as they have become acutely aware of the defects in the educational process in our society and for our times. A steady stream of reports and statements has analyzed these defects and prescribed for their remedy and repair. Few college administrations and faculties have been able or disposed to ignore or avoid this salutary mood of searching self-criticism, although in some instances it has seemed to be almost too easy to pronounce the general confession ("We have done those things which we ought not to have done and we have left undone those things which we ought to have done") and then forthwith to vote for curriculum changes which merely substitute new nostrums for old.

The Harvard report, *General Education in a Free Society,* stood as a landmark at an earlier stage of the discussion. The Report of the President's Commission on Higher Education, *Higher Education for American Democracy,* is the most recent and the most representative major pronouncement. The papers and debate at the recent (September 1948) Ninth Annual Conference on Science, Philosophy, and Religion on "The Goals for Education," might be taken as a sample of the continuing discussion. These three studies and many others agree on one major premise: the traditional pattern of higher education in America is gravely deficient and must be reformed.

The particular counts on which this general judgment is based vary from report to report. But here, too, basic motifs are beginning to come clear. It is generally agreed that the older

education failed to provide men with a unified vision of life or an integrative focus for human knowledge. It failed adequately to stimulate deep and dynamic loyalties to humane and self-transcending values, intellectual or moral. It made for an atomization of life, for a fragmentation of knowledge, for a gross unbalance in the curriculum between the physical and social sciences on the one hand and the humanities on the other. College life in such an atmosphere became increasingly irrelevant to the storms and crises of the world's deepening tragedy. This irrelevance was usually one of two sorts: the *solemn* irrelevance of expert but uncoordinated knowledge or else the *trivial* irrelevance reflected in the popular connotation for the once-respected adjective "collegiate." In short, the generality of educators is willing to acknowledge that such a "liberal education" fulfilled neither of its implicit promises—to liberate and to educate.

Meanwhile, the full tide of a major revolution rolls on in American education. The postwar expansion of college populations has bulged dormitories, including Quonset villages and trailer camps, and has overtaxed classrooms, libraries, and faculties. Even though many individual schools have passed the peak of their overcrowding, the general trend of expansion is expected to continue. (If the goals of the President's Commission were met, we should have a near-*doubling* of our national college enrollment by 1960!) But even more significant changes are also afoot. Students, faculties, and administrations are in acknowledged quest for better patterns and procedures of education. There is a mounting criticism of the graduate schools where teachers are trained—trained well to learn, but not nearly so well to teach! Everywhere there has been an imperative demand for integrative curriculums and for educational goals which stress the importance of synoptic understanding and humane convictions as the prime marks of an educated man.

All of the new prescriptions stress this latter note: an adequate education is one which aids men to see human life and knowledge synoptically and which leads them to be loyal to the common human good, above and beyond laissez faire self-interest. As the likeliest resources for achieving these goals, great faith is

placed in the humanities and the social sciences, and these are enjoying a resurgence of emphasis and curricular favor. If a person can assimilate a good measure of the funded wisdom of the human past (now embodied mostly in the great books of literature and philosophy), and if he can learn to use, with an enlightened and humane conscience, the basic insights about man and society now afforded him by the social scientists, he is in a fair way to becoming a free man and a good citizen. And as this newly integrated, newly relevant educational pattern is extended more equitably throughout the whole of our society and thus made more truly democratic in character and spirit, the nation and the world will begin to reap the good harvest of critical intelligence dedicated to the common cause of personal fulfillment and social progress. These are the general lines of a fundamental agreement amongst our educational philosophers. The practical proposals for implementing these educational ideals exhibit considerable diversity and need not be debated or appraised here. Instead, it seems important to raise yet one more prior question for the educational philosopher: "In this new search for intellectual unity and ethical conviction in the educational process, has *religion* been seriously considered as a significant component in, or context for, good liberal education?" This would certainly seem an obvious possibility to anyone familiar with the history of educational theory in our civilization. And yet when one turns to the reports and statements for intelligent comment on the role and function of religion in a liberal education, the result is literally astonishing to those who have managed to retain their conviction that high religion (religious devotion to God's righteous rule in human lives) and sound learning (critical loyalty to truth as it may be served by exact knowledge and synoptic understanding) are not only compatible, but positively correlated. The Harvard report acknowledges that such a notion was once widely held, but goes on bluntly to assert that "whatever one's views, religion is not now for most colleges a practicable source of intellectual unity."[1]

[1] *General Education in a Free Society* (Cambridge: Harvard University Press, 1945), p. 39.

A little further on the committee, with a typical sensitivity to the claims of "open-mindedness," tries to mitigate the effect of such a sweeping negative. "We must perforce speak in purely humanistic terms [why "perforce"?] . . . . But we have been careful so to delimit humanism as not to exclude the religious ideal."[2] The President's Commission would appear to have agreed to treat religion as a not-very-live, but yet theoretically possible, option among the motive-forces for their chief desideratum—the democratic spirit.

> To cooperate for common ends, we must have faith in each other. Ethical principles that will induce this faith need not be based on any single sanction or be authoritarian in origin, nor need finality be claimed for them. Some persons will find the satisfactory basis for a moral code in the democratic creed itself, some in philosophy, some in religion. Religion is held [by whom?] to be a major force in creating this system of human values on which democracy is predicated, and many derive from one or another of its varieties a deepened sense of human worth and a strengthened concern for the rights of others.[3]

Thereafter, in the longest, most comprehensive and ambitious statement in the current discussion about higher education, the cloak of disparaging silence is drawn round the whole subject of the possibility of a religious orientation for a liberal education.

Let us add yet another, somewhat different, sort of testimony on this same point. A recent and very discerning study has been made of the status of religion in the books college students normally read as foundation texts in the general college curriculum *(College Reading and Religion: A Survey of College Reading Materials Sponsored by the Edward W. Hazen Foundation and the Committee on Religion and Education of the American Council on Education).* It is the *unanimous* report of careful observers that "religion is a neglected field of reading and study on the part of college students [and their teachers]."[4] It is further agreed that "the lightness of touch and even ignorance

[2] *Ibid.*, p. 76.

[3] *Higher Education for American Democracy,* I: *Establishing the Goals* (Washington: Government Printing Office, 1947; New York: Harper & Bros., 1948), 50.

[4] *College Reading and Religion* (New Haven: Yale University Press, 1948), p. x.

with which intellectual issues having a religious bearing or import are dealt with [in these representative college texts] would seem little less than astonishing when the expansion of scholarship in general is taken into account."[5]

One conclusion about the educational revolution, therefore, is clear. Education is by way of being reformed with little or no regard for the possible contribution of religion to its reformation. For a very tangled skein of reasons it has come to pass that in the name of tolerance and the democratic spirit American educators—whatever their private religious beliefs and convictions—have in fact suppressed the consideration of the problems of the religious interpretation of reality and human existence in the educational process. Such matters, so the student is told by precept and example, are private affairs, which are entitled to mutual respect, but about which there ought to be no unseemly disputing, such as would be involved if they were to be submitted to critical examination and discussion. Even so, it is not at all uncommon to hear religion sneered at and dispraised—without critical examination and discussion—by professors hostile to it. Academic men do have convictions and they do not shrink from controversy; but when religious questions are called, only the secularists, it would seem in the present instance, are prepared to cast their vote with full clarity and assurance. Thus, it has come about that in the practical outcome religion and the religious life-view have been effectually discounted and made to appear at the very most an accessory, but not an essential, component of the good life. Spurred by the twin fears of sectarian bias and indoctrination (wholesome fears when not phobic!), we have actually promoted religious indifferentism and have given aid to a militant secularism—of the genral sort extolled by John Dewey in *A Common Faith*—in our academic communities and in the larger society in which they exist. And thus it has happened that the secularists have won their most striking victory in over a century. "The democratic creed itself"—the lowest common denominator of

[5] *Ibid.*, p. x (in Dean Donald P. Cottrell's introduction to the report).

all liberal educational philosophies, including those with religious context—now becomes the highest common multiple of the new educational reform. The revolt against dogma has now become official dogma itself.

It is interesting that in the face of this situation reliable studies of the religious attitude and interest amongst college students (such as *The Religion of the Postwar College Student*[6] by Gordon W. Allport, James M. Gillespie, and Jacqueline Young) as well as multiple-opinion polls among the general population (see Allport's chapter in *College Reading and Religion*[7]) regularly show a continuing interest in religious questions and the continuing vitality of the claims of religion to truth and power. The groups to be educated in America are by no means as indifferent to religious problems as the group which proposes to educate them.

Nor is it true that this apparent agreement amongst the professional philosophers of education reveals the whole truth about the opinions and attitudes toward religion in the faculties and administrations of American colleges and universities. A sizable and growing number of American intellectuals, deeply interested in liberal education at its best, have long maintained the firm conviction that high religion is the best and most adequate context for the soundest education. There are many who believe a religious world-view supplies both the intellectual unity and the ethical motivation for intelligent and humane living. One of the most important of the groups representing this viewpoint has been the National Council on Religion in Higher Education. It was founded by Professor Charles Foster Kent of Yale in 1922 to support the conviction "that every college and university should provide satisfactory opportunities for the study of religion as an academic subject of fundamental importance and for the practice of religion as a basic element in the good life." Over the past quarter-century the council has recruited exceptionally gifted prospective teachers and has provided them

[6] *The Journal of Psychology*, 1948, pp. 25–33; also published as a separate pamphlet, Provincetown, Mass.: The Journal Press, 1948.

[7] *Ibid.*, pp. 85ff.

with Kent Fellowships for graduate study not only in religion but also in all the other fields of the university curriculum. It is quite impossible to dismiss the religious interest of the council membership as "sectarian," "dogmatic," "anti-intellectual"; a cursory check of its membership will show an extraordinary range of interests and positions represented. The council has likewise had allies in its concern. The American Council on Education, through its Committee on Religion and Education, has been actively studying this whole problem. Likewise, the Edward W. Hazen Foundation, with its various programs and conferences, publications, and student counseling, has also been widely effective in maintaining a high level of discussion of the problem both of religion and of education.

In 1945 a program of faculty consultations on religion in higher education was developed under the joint sponsorship of the American Council on Education, the Edward W. Hazen Foundation, and the National Council on Religion in Higher Education. A steering committee was appointed and the program of visitation launched. An excellent preliminary report on the original design of the program and on its first year of functioning has been prepared by President John W. Nason, of Swarthmore College.[8] By 1948 a total of fifty-three consultations had been held in twenty-nine states by sixteen consultants. Of these, twenty-nine were held in private institutions (twenty-one in smaller liberal arts colleges, and eight in larger universities), ten in state or municipal institutions, nine in church-related institutions, two in teachers colleges, one in a technical school, and two in junior colleges.[9]

The typical consultation consisted of a personal visit by an established scholar and teacher to a campus upon the invitation of the administration and a faculty committee of the college or university. The consultant usually spoke to the general faculty on some aspect of the general theme of religion in

[8] Nason, "Religion in Higher Education," EDUCATIONAL RECORD, XXVII (1946), 412–21.

[9] See the last section of this article for a list of the institutions visited and the names of the consultants.

higher education and thereafter joined a series of smaller groups of faculty and administrators for prolonged discussion of the implications of his general thesis. Usually an interview with a representative student group was included, and, infrequently, an address in the college chapel. The average visit lasted three days.

The frank purpose of these consultations was exploratory. It seemed important to find out what was being done to make religion a live intellectual option on representative campuses; to discover and appraise faculty and administrative reaction to a competent presentation of the case for a religious context for liberal education; to launch preliminary discussion with interested parties as to ways and means of making religion a more vital factor in the educational process and in the life of the academic community. It seemed a useful experiment to try to determine the extent to which a fair sample of American educators could be interested in the claims of high religion as a rightful part of good education. The consultants were all men who were themselves ardently devoted to the cause of educational reform and the readaptation of higher education to the crisis of our times. They spoke to the educators as educators and always, first of all, in the name of sound learning and good citizenship. In almost every case they encountered an initial suspicion that this was merely special pleading, but, again, in almost every case it was possible to convince the majority of each faculty group that here was a serious attempt to understand and to interpret the intellectual enterprise itself in at least one of its most important possible contexts. Although there was an actual diversity among the consultants in respect to their own religious opinion, there was a common mind among them as to the crucial significance of a religious life-view in the search for intellectual unity and in training for responsible citizenship. They all undertook to challenge the tacit hegemony of secularism and "scientism" in current educational philosophy and to urge various versions of the general thesis that the surest and most dynamic basis for rational endeavor and democratic living is to be found in the Judaeo-Christian tradition at its

best and in its more contemporary (as contrasted with its more archaic) forms. In the smaller group discussions the chief questions usually turned on *how* religion, so conceived, might serve as a supporting medium for the study and teaching of the sciences, the social studies, and the humanities. After each consultation careful reports by consultants and faculty committees were submitted to the steering committee of the project. These reports are uncommonly interesting and support some rather striking and important general observations.

The fifty-three campuses visited represent, among them, almost every type of American academic community (the most obvious excepted type was the sort represented by Harvard, Chicago, or Columbia; yet five of the consultants were from Princeton and Yale, where newly organized departments of religion are actively implementing the aims of the consultation program). Within this wide range of "sample observations" one finds an inevitable diversity of reaction to the consultations and among the consultants. Nevertheless, it was observed that in almost every instance the intellectual atmosphere of the college visited was heavily influenced by a pervasive secularist and positivistic standpoint. The following is a typical comment:

> The reaction against the older forms of indoctrination and the liberal's vivid fear of fanaticism have actually led to what has been, in effect, propaganda for secularism, and this has been more influential and pervasive than many of them [the faculty] had ever realized. There is a real interest in religion at ————, but this interest is largely unformed and uninstructed. The result is that a great tradition and a great opportunity have, up until quite recently, been wasted.

The consultants comment frequently on "the lack of intellectual and moral unity in the university as a whole." Most colleges, even the small ones, are afflicted with "departmental parochialism" and an unwholesome "intellectual insularity" separating faculty by fields. In a few church-related colleges, "religion plays an essential part in the life of the college." One state-supported institution was reported to be "more hospitable to religion than some private or even church-related

colleges or universities." Of one excellent small college it was said, "If every private institution of higher education were in as healthy a condition, our program would have very little to do." But far more numerous and typical were such comments as, "The discussion of religion reflected a limited understanding of the place of religious thinking in the determination of general educational policy, and their general philosophy of education seemed quite secular." Of yet another good college it was commented that, "There is no hostility to religion, yet no very live ideas about it. Most people felt that there were no important issues in religion to discuss critically."

On the whole, presidents and administrative officers were "initially more hospitable to the development of a religious program than were the majority of the faculty." Often this was because of "sincere personal conviction" and "genuine concern"; occasionally an enthusiastic administration pushed the cause more forcibly than the consultant was inclined to do. (One consultant made a sage observation that most trustees prefer as presidents "individuals who represent all of the solid and respectable virtues which society admires but does not always practice.") However, there were many administrations "polite but indifferent." The vast majority of administrative officers, whether favorable or lukewarm, were unclear as to the development of a religious perspective and attitude which might pervade the educational process. Many consultants commented unhappily about the apparent lack of really mutual relations between administration and faculty and between administration and students. Several of them reported their efforts to call attention to the fact that a democratic atmosphere in offices, classrooms, and commons was an important contribution to the growth of a religious attitude in the academic community.

The consultants are surprised more often than they should have been at the naïveté of faculty members in religious matters. Both those who declared themselves "hostile" or "neutral" to religion revealed the most archaic and regressive notions about the contemporary religious situation and the intellectual

temper of modern liberal Christianity and Judaism. Most of them seem to rely on garbled childhood memories to tell them what religion is, and their familiarity with the literature and living spokesmen of liberal religion was strangely scant for cultivated and intelligent people. Occasionally faculty members denounced religion as "superstition," "prescientific benightedness," and "an emotional crutch," "both useless and dangerous." A larger group was convinced that a humanistic or naturalistic creed was wholely adequate for a modern man. This conviction was balanced by about an equal number of devout, well-instructed churchmen who maintained their private ground but often chose to remain silent in public meetings. But the largest group of all were "just confused." "They are prepared to acknowledge some responsibility for the religious conviction of their students, but they just don't know how to go about it."

Most of the campuses visited would have to be rated as superior in their academic quality. It is, therefore, natural that the consultants agreed that this sample of colleges "generally do a good job of training the intellect, but neglect the task of educating the whole man." Of one place it was said, "The sense of human brotherhood and Christian ethics actually pervading the campus was strong, indeed stronger than I have found on any other campus." Of another, "There's an overt friendliness to religion, but a feeling that it's someone else's job." More typical, though, is a comment like this: "I got a very favorable impression of the quality of students there and I am convinced that ———— does a superb teaching job as far as factual training and single-discipline specialization can suffice."

Everywhere the consultants inquired about the form and quality of the curricular offerings in religion. Their most frequent conclusion was that such courses "are good in quality but inadequate in scope." In this part of the discussion the fear of "sectarian bias" was especially pronounced. "The faculty at ———— is sympathetic to the study of religion, but afraid that it would be difficult or impossible to maintain the necessary objectivity in presenting the subject for the obvious reason

that anyone who cares to teach religion probably has some religious convictions of his own. These might become plain to students and influence them unduly." (Whether an economist's convictions about controversial issues in economics would similarly stultify his "objectivity," deponent saith not!) Everywhere there is need, according to the consultants, for carefully planned courses in religion; at many places more courses or expanded staff are indicated.

The teachers of religion in the colleges visited were generally reported to be "well-trained and competent." In some instances they were judged to be "less than adequate" and "confused as to aims and procedures." It was generally agreed that too much was expected of them; they often have to combine the direction of "campus religious activities" with their teaching, often have to teach an impossible gamut of subjects. One thing that this investigation has made plain is that even if offerings and faculty in religion were greatly expanded, administrations would be hard put to it to find enough adequately trained personnel.

Most of the colleges visited made some sort of provision for the religious activity of the students. But none was judged adequate for the real need that exists. In only two or three colleges was "the coordination of religion in curricular and extracurricular activities functioning well." Where compulsory chapel services were held, they were reported to be usually "resented by students" and "contemned by faculty." Several consultants commented on what might have been observed by all: the urgent need for religious counseling of students on every campus. The average student with religious problems or questions has no adequate resources in dealing with them either in himself or in the too-remote, too-meager contacts he has with the too few on the average faculty who might help him. Denied fruitful resolution of his problems, his religious growth is often arrested or distorted.

For all their critical judgments, however, the over-all prognosis of the situation, as reported by the consultants, is strikingly

hopeful. Reflection upon the consultation program has made them feel that there is real vitality, intellectual and moral, in American colleges, and this within and in spite of the confusion and disorder of the typical educational process. Nor does the apparent victory of the secularists stand unchallenged. The devotedly religious among faculties and student bodies are taking heart and speaking out, and the hitherto "neutral majority" is developing increasing interest in, and understanding of, the great religious issues of life. Everywhere the consultants came to feel what is chiefly needed is that the case for religion *be given a fair hearing* in the open forum of academic discussion. It is the firm agreement of the consultants that where this is done there is usually a vigorous and generally favorable reaction from both faculty and students.

This particular experiment in exploration and challenge has been completed. The question of effective follow-up and next steps is still being discussed and no official recommendations have yet been made. From the findings of the program, however, several new projects are being developed which will reinforce and extend the general effort to confront American educators with their responsibility toward religion in liberal education. This is a continuing, imperative task.

Incomplete and fragmentary as it was, this consultation program seems to have marked out at least five rather firm conclusions:

1. A case can be made for religion as a crucial factor in liberal education which will be generally acknowledged as an intelligible and intellectually respectable education theory.

2. No curriculum which ignores or suppresses a competent and critical examination of the history and literature of the Judaeo-Christian religious tradition can fairly be called either "liberal" or "general."

3. The secularists have no monopoly on intelligent concern for truth and human values, and their loudly proclaimed preference for "the democratic creed itself" is, in fact, a rival creed and metaphysics which deserves, in any liberal education, to be

examined on its merits alongside the chief alternatives and not covertly imposed as an arbitrary dogmatism under the ambiguous constitutional concept of "separation of church and state."

4. Modern college students respond eagerly to the chance for a firsthand investigation of the truth claims of high religion presented by competent scholars who themselves have firm religious convictions, and yet who eschew the impulse to impose these convictions dogmatically.

5. It will be a major tragedy of contemporary education and of the society which it seeks to serve if the cause of religion in higher education goes by default or fails because of the capture of the higher education by implacable and doctrinaire secularists. This need not happen. The evidence accumulates that the influence of liberal religious attitudes and ideas is *waxing* in American academic life.

Faculty Consultations on Religion in Higher Education

Program Summary, 1945–48

Institution Visited	Consultant
Pacific Coast and Mountain Area (7 consultations)	
1945–46	
Mills College	Theodore M. Greene
Occidental College	" " "
Pasadena Junior College	" " "
Pomona-Scripps Colleges	" " "
Reed College	" " "
University of Oregon	" " "
1947–48	
University of Colorado	Walter M. Muelder
Central States **(13 consultations)**	
1945–46	
Beloit College	George F. Thomas
Denison University	" " "
Lawrence College	Edwin E. Aubrey
Rockford College	" " "
University of Iowa	George F. Thomas

1946–47

Albion College	David E. Roberts
Ball State Teachers College	F. Ernest Johnson
Carleton College	John W. Nason
Cornell College	David E. Roberts
DePauw University	Walter M. Horton
Ohio Wesleyan University	Edwin E. Aubrey

1947–48

Manchester College	William A. Christian
Stephens College	David E. Roberts

Southern States

(11 consultations)

1946–47

Agnes Scott College	Albert C. Outler
Atlanta University	Theodore M. Greene
Dillard University	Walter M. Muelder
Southwestern College	Albert C. Outler
Talladega College	Walter M. Horton
University of Florida	Christian Gauss
Washington & Lee University	William A. Christian
Virginia Union University	Christian Gauss

1947–48

Fisk University	David E. Roberts
University of Louisville	" " "
University of Tennessee	Edwin E. Aubrey

Middle Atlantic States

(13 consultations)

1945–46

Bryn Mawr College	George F. Thomas
Cornell University	William E. Hocking
Carnegie Institute of Technology	George F. Thomas
Syracuse University	" " "

1946–47

Colgate University	Albert C. Outler
Goucher College	Theodore M. Greene
University of Rochester	Willard L. Sperry

1947–48

Bethany College	John C. Schroeder
Bucknell University	David E. Roberts
Cheyney Training School	F. Ernest Johnson
Haverford College	Victor L. Butterfield
Lehigh University	Edwin E. Aubrey
New Jersey College for Women	Christian Gauss

New England States

(9 consultations)

1945–46

Brown University	William E. Hocking
Dartmouth College	Edwin E. Aubrey
Wesleyan University	George F. Thomas

1946–47

Bowdoin College	Victor L. Butterfield
Smith College	George F. Thomas

1947–48

Amherst College	Albert C. Outler
Bates College	Christian Gauss
University of Maine	Howard M. Jefferson
University of Vermont	Walter M. Muelder

Leadership Training through Group Experiences[1]

By RUTH STRANG

UNDERSTANDING CHILDREN and young people underlies counseling, group work, curriculum-building, and instruction. In counseling, the worker must understand individuals in order to help them to understand themselves and develop their potentialities. In group work, the effective leader understands the individual members and the interaction that takes place among them. In modifying the curriculum, teachers and administrators begin their study with these questions: What do we need to know about pupils? How can we get this information? How can we use it to provide the experiences they need? More leadership in helping parents, teachers, and counselors to understand children and young people should be developed.

Leadership training may be given indirectly through experiences which in themselves are valuable to every member of the group. Clinics and consultation centers may widen their influence through their in-service education of counselors and teachers who work with individuals referred to them for help. Members of study groups, who have made some progress in understanding children and young people, are able to go out as leaders of new groups. Thus, the process of learning to understand people spreads in ever-widening circles.

One way this works was described by T. H. Owen Knight. In Montgomery County, Maryland, Dr. Daniel Prescott has developed a program of child study leading to better understanding of human beings. Simply stated, Mr. Knight said the assumptions underlying this program are that (1) every child

[1] Synthesis of the autumn luncheon-forum of Youth-Serving Agencies, sponsored by the Washington Council of the Alliance for Guidance of Rural Youth on the subject "Helping Teachers and Parents Understand Young People." The three speakers on the panel were T. H. Owen Knight, supervisor of pupil personnel, Montgomery County, Maryland, Public Schools; Lucien Adams, coordinator of Guidance and Consultation Service, State Department of Education, Richmond, Virginia; and Jane Franseth, specialist for rural schools, U.S. Office of Education.

is different and unique, and (2) there are causes in back of a child's behavior that can be understood, or, in other words, it is possible to understand what makes children behave as they do.

The program of child study started in the county four years ago as an in-service training program for teachers. During these years between 55 and 65 percent of the teachers of the county have participated in the program, on a voluntary basis, on their own time. In their study they have chosen individual children and have tried to develop techniques for finding out how each child was different from others. They have often spent a full year simply learning how to observe the child and understanding the forces, including his interaction with other persons, that make a child behave as he does.

After they have developed these techniques of observing the child in his environment, they are ready to set up hypotheses as to the causes of behavior and use a laboratory technique in proving or disproving hypotheses that they have set up.

Mr. Knight continued:

> Three years ago, a group of parents heard that the teachers of the county were engaged in a program of child study. They asked more about this program. Then they said, "Well, if teachers, with all their training, need to learn ways to understand children better, why wouldn't it be possible for parents to have similar child-study programs that would help them to understand children better?"
>
> A few years ago we might have thought otherwise, but why wouldn't it be possible? We had to give them a chance to organize parent-child study groups, and they have.
>
> It has been ten years since I was teaching classes in child psychology to parents in an adult-education program. I used an academic approach and procedure. This type of textbook study seemed to satisfy the parents tremendously; at least they learned some new words to add to their vocabulary, but that is about all it amounted to. Now we have study groups in distinction from instruction groups.

It is common for a parent to come to the group with specific problems which he wants the leader or the group to solve. A parent will ask questions such as: "How can I make my child get up and get to school on time in the morning?" "What should I do—my child is still bed-wetting?" They look for answers

and remedies and are disappointed when they find that the study group does not give the answers.

The study groups should start out with the idea that they can learn to understand children, even though the members are untrained and some of them have had little education. Regardless of their educational background they have found that they can set up a study group and find out some of the causes of human behavior. They grow in their ability to recognize that there are many reasons in back of a child's behavior. As they try to understand him, they are able to help the child a little more.

At the same time that they are studying the behavior of their own children, they are learning about themselves and are developing a technique of working with people. Out of this experience grow certain fundamental concepts and sensitivity to some of the forces that are operating in human behavior and that should be taken into consideration. They do not get the idea that they have become specialists who can diagnose and treat behavior problems. Their attitude is best expressed by a comment one parent made in an attempt to evaluate the program, "Well, I don't believe I understand my child any better, but I will say this: He has a right to be understood."

The parents themselves have carried on the program with very little help. They have their own group leaders. These leaders have previously been members of a study group. As leaders they meet with Mr. Knight every two weeks to become more proficient in study-group procedures. They learn how to keep a discussion going in the direction that the group wants it to go.

A few fathers participate. One of the most interesting groups is that in which both mothers and fathers talk back and forth about the causes of behavior. Mr. Knight said they had had more success with parents of elementary school children than with study groups on the high school level. Actually, however, a number of parents in every group have children of preschool, elementary, and high school ages. Joint study groups of parents and teachers have been discouraged because of the possible inhibiting effect on the parents of the teacher who to them represents an expert or a person in authority.

Parents have been informed about, but not urged to attend, these study groups. Last year in the county there were between twenty-five and thirty parent study groups, each with its own leader and meeting once every two weeks. In answer to the question, "What is the procedure for getting into the study groups the parents who need this experience most?" Mr. Knight replied,

> We do not succeed in getting into these groups the parents who really need the experience most, but we do succeed in getting into the groups parents who need it a great deal. Every P.T.A. of the county has a parent study chairman, and they plan lectures and let parents know about the study groups. For example, last year Dr. Prescott gave an overview lecture to three or four hundred parents. As parents participate in the study groups and get satisfaction from them, they spread the word to others, and more parents join. One school ran its whole P.T.A. program as parent study groups, in place of any other kinds of meetings. After the general business meeting, they broke up into small study groups. At the same time, the school was carrying on the more intensive child-study program. To try to sell the idea more aggressively, I think would defeat the program.

For more intensive study, a workshop for the leaders, starting at 9:30 A.M. and continuing until 1:00 or 2:30 P.M., was held for one week. This workshop was attended by 113 parents. They listened to lectures which gave them more background in child development and child study and spent the afternoon in practice sessions. When 113 parents voluntarily leave their homes for a week to get this additional help, it is evident that these study groups mean much to them.

During the three to four years that teachers and parents have been engaged in this study program, they have developed some fundamental concepts: that each individual is unique, that the causes of behavior are complex and interrelated, and that personality is continually growing and changing. This understanding of human beings in general leads to a better feeling toward their own children and toward other persons. They have been helped to use the resources within themselves to understand children and to help them grow in their own best way.

Another type of combined service and leadership training

program is the Consultation Service, State Department of Education, described by Lucien Adams. Originally started in 1939 as a joint project of the National Youth Administration, the Virginia Employment Service, and the State Department of Education, it is now the sole responsibility of the State Department of Education. To date, four of the seven Consultation Service centers, recommended by two evaluation committees, have been established in the state.

This Consultation Service, Mr. Adams stated, has two main purposes: to provide adequate vocational guidance for out-of-school youth, and to provide assistance to schools in the development of adequate guidance programs.

Another feature of the Consultation Service centers is the opportunity for summer experiences they provide for counselors and for teachers who expect to do some counseling. These counselors-in-training have opportunity to observe the procedures employed in the Consultation Service—testing, interviewing, participating in the case conference in which the data collected are synthesized and interpreted, writing the case study, and making a follow-up study of the individual's adjustment. These summer programs were offered for two years, and representatives from a number of schools in the state attended. Teachers and school administrators felt that their guidance programs had been aided more by this experience than by the theoretical college course in guidance.

Taking a cue from the favorable reaction to the Consultation Service center as a method of in-service education, Mr. Adams and his associates have developed guidance clinics in connection with colleges in the state. Counselors and teachers who are concerned with working with young people get actual experience in counseling in these centers. They administer and score tests, interpret test results, analyze other information about the individual, and write case studies. They also obtain practice and instruction in methods of studying occupations. They can immediately use this actual experience in the vocational guidance of pupils in their own schools.

Mr. Adams then described this program in more detail. Enrollment in the training group is limited to ten counselors,

who are supervised by about three persons. Youngsters in the schools of the area apply for this service. They are invited to bring any kind of problem to the counselors. The director of the program serves as the intake interviewer, gets an idea of the young person's problems, and refers him to a counselor. The counselor gives him a registration form to fill in, which supplies certain background information. This is usually followed by an interest test and then the first interview with the counselor. The counselor writes up the interview in detail, in the form of a case summary including information on the health, appearance, and personality of the individual, his home situation, school record, school and work experience, leisure activities, ability, interests, educational and vocational plans, and other information that seems to be significant.

Following the interview, a testing program is set up for the counselee, and this information is added to the interview summary. At the staff conference, the counselor, the person doing the testing, the director of the center, usually one other member of the staff, and frequently teachers, parents, and principals discuss the case and help the counselor to prepare for his second interview with the young person. In this interview the counselor tries to help the individual to know himself better, to recognize his potentialities, and to make plans for realizing them. This is the general procedure developed in the Vocational Advisory Service of New York City.

The use of this service as a method of in-service education in counseling has received favorable comments from school people taking the training and from pupils and parents.

In rural areas the service has been organized on a county basis. Part or all of the staff of one of the Consultation Service centers has gone into a county and worked with principals, counselors, and pupils in the field. Thus, the school people have a chance to work with their own pupils in their own schools.

The plan is not without drawbacks. In the first place, it is expensive. And even with the fairly large staff, it is possible to reach only a small number of the counselors, teachers, and principals of the state as a whole. Mr. Adams would like to expand

this combination training and service program so that it will reach more people.

This program is an example of how a clinic or a consultation service can be used as a means of training counselors, teachers, and principals. Thus, the service to pupils in the schools is extended through the persons who are trained in connection with the particular youngsters who come to the center.

The kind of leadership that should be developed on a national scale was described by Jane Franseth. The concept of leadership, she said, has changed considerably. The effectiveness of one's leadership used to be measured by the leader's success in getting others to fall in line. According to the modern view, leadership is a process that helps to release the creative energies of the people so that they can do their best for the welfare of all. Since everybody has some capacity for leadership, the problem is not so much to develop leaders as to develop the process of leadership in all sorts of people.

What are the results of this kind of leadership in the schools? Using an excerpt from a letter prepared by a pupil, Stephen M. Corey illustrated the older kind of leadership in which the teacher tries to get children to do what she thinks ought to be done:

> I don't know why the teachers don't like me. They never have very much. Seems like they don't think you know anything unless you can name the book it comes out of. I've got a lot of books in my own room at home . . . books like *Popular Science, Mechanical Encyclopedia,* and Sears' and Ward's catalogues, but I don't very often just sit down and read them through like they make us do in school. I use my books when I want to find something out, like when Mom buys anything second-hand I look it up in Sears' and Ward's first and tell her if she's getting stung or not.
>
> I can use the index in a hurry to find the things I want. In school, though, we've got to learn whatever is in the books, and I just can't memorize the stuff. Last year I stayed after school every night for two weeks trying to learn the names of the Presidents. Of course, I knew some of them, like Washington, and Jefferson, and Lincoln, but there must have been thirty altogether and I never did get them straight. I'm not too sorry though because the kids who learned the Presidents had to turn right around and learn all the Vice Presidents.

I'm taking seventh grade over but our teacher this year isn't so interested in the names of the Presidents. She has us trying to learn the names of all the great inventors. The kids seem interested.

I guess I just can't remember names in history. Anyway, this year, I've been trying to learn about trucks because my uncle owns three and he says I can drive one when I'm sixteen. I already know the horse power and number of forward and backward speeds of twenty-six American trucks, some of the Diesel works. I started to tell my teacher about it last Wednesday in science class when the pump we were using to make a vacuum in a bell jar got hot, but she said she didn't see what a Diesel engine had to do with our experiment on air pressure, so I just kept still. The kids seemed interested though. I took four of them around to my uncle's garage after school and we saw the mechanic, Gus, tearing a big Diesel truck down. Boy, does he know his stuff. . . .

Even in shop I don't get very good grades. All us kids made a broom holder and a bookend this term and mine were sloppy. I just couldn't get interested. Mom doesn't use a broom any more with her new vacuum cleaner and all our books are in a book-case with glass doors in the parlor. Anyway, I wanted to make an end-gate for uncle's trailer but the shop teacher said that meant using metal and wood both and I'd have to learn how to work with wood first. I didn't see why, but I kept still and made a tie rack at school and the tail gate after school at my uncle's garage. He said I saved him $10.

The teacher represented in this quotation is the old type of leader—one who makes every member of the group fall in line with her preconceived ideas. The teacher with the modern view of leadership will be concerned with the progress a pupil has made—what he has accomplished. Such a teacher will help unify a group working toward the solution of common problems. The approach is positive. Under this kind of leadership pupils feel that they belong to a group. They will learn more rapidly and effectively. They will achieve up to their ability. One study of children's worries showed that children worry most about failure, while teachers felt that the children had not worried enough about it. The mental attitude of these pupils improved under the kind of leadership that provided more situations in which each one could succeed.

Teachers, as well as pupils, need to be respected, loved, and

appreciated. Under these conditions they will do their best work. Anything, Miss Franseth said, that helps pupils or teachers feel that they belong and are appreciated releases their creative energies so that they will want to do and can do a better job.

This kind of leadership is resourceful. The leader should be a reservoir of good ideas from which pupils can draw when they have exhausted their own resources. Classes become laboratories instead of "sitting-rooms." The children are working on real problems such as specific problems of school and community health. They often work in groups. Teachers have worked with the pupils to make their rooms more attractive. The walls are painted clear, light colors instead of a drab tan or brown. There are attractive reading corners that invite children to read. Science corners and art corners offer opportunities for children having these special interests. In these centers or laboratories children may write poetry, make original paintings, and explore in the field of science. From observation alone, one can see the influence of different kinds of teacher leadership.

Miss Franseth went on to discuss a third question: How can this desirable kind of leadership be developed? The method of child-study groups has already been described. These child-development programs are under way in a number of states. A superintendent in Louisiana said that this program of child study has done more than anything else to improve the teacher as a leader whose relationship with children is based on an understanding of them. One bit of evidence in support of this statement is that rarely do parents whose children have teachers who have been members of the study groups ask that their children be transferred to another classroom. These teachers know more about their pupils and understand what makes them feel that they belong and that they are making progress.

Another method is the consultant type of supervision. Improvement of supervision in some areas throughout the United States is being achieved by providing prospective supervisors with many guided experiences—on the campus and in the field—in child development, in planning curriculums with reference to

community problems and children's problems, and in cooperative planning toward the solution of common problems.

On the international level, a conference was held at Prague last summer, a program of child study sponsored by UNESCO, which will probably have influence in many countries for years to come.

The new type of leadership training emphasizes understanding the individual and improving human relations. A better understanding of children and young people is possible. Through objective observation plus interpretation, teachers and parents can gain insight into the multiple causes of behavior and the forces operating to make an individual behave as he does. Members of the study groups approach the problem with an inquiring mind. Gradually, from the discussion of their observations and experiences, they develop for themselves fundamental concepts of child development. They show initiative and take responsibility for the child-study process, evolving it to meet their particular needs. They recognize the child's right to be understood. They develop a technique of working with other people. Helping teachers and parents to use the resources within themselves is one of the most effective methods of leadership training. A second method is supervision with the guidance emphasis. A third method is the use of a clinic or consultation service as a center for the in-service education of principals, teachers, and counselors.

These kinds of leadership training are effective on all levels —with teachers and parents who work directly with children and young people, with counselors doing more specialized guidance work and with consultants and resource persons who work with local leaders of groups.

The aim of leadership training is to develop leadership qualities in every member of the group. Of primary importance is ability to understand other people, to get into their world, to help them succeed, to release their creative energies, and to create in every member a sense of belonging to the group, and of being of worth.

Basic Courses in General Education[1]

With Special Reference to the Humanities Course

By ROY IVAN JOHNSON

IT IS ENTIRELY POSSIBLE that in our preoccupation with method in education we have at times been content with neat patterns of procedures, while we have been relatively unconcerned with the kind of human product that is shaped by our labors. Said Herbert Spencer, "To prepare us for complete living is the function which education has to discharge; and the only rational mode of judging an educational course is to judge in what degree it discharges such function." These words are as fully charged with wisdom and common sense today as they were when they were uttered. Our focus must be broad enough to include the end as well as the means. We must be sure of the goal as well as the ground under our feet. We must have a sense of direction as well as a sense of motion.

In spite of the soundness of this principle, we are frequently guilty of "borrowing" methods without relating them clearly to our own purposes and without evaluating their effectiveness in terms of end results. It is a short step from this type of logic to the experimental method in education, for the experimental method simply seeks to discover better ways of doing the job. All procedures, all instructional techniques, all organizational patterns must be considered "on trial" until they have proved their value—or until methods have been developed that promise greater value. The ingenuity of the teacher and the administrator is constantly challenged. They are on the alert for better ways to achieve better results. Thus, improvement becomes a continuing function of any experimentally minded school.

One argument against "borrowing" too readily a pattern of organization that seems to work in another institution is that schools, like people, have their own individual characteristics and needs. No college is, or should be, the duplicate of another.

[1] This article is based on an address given before the Missouri Association of Junior Colleges, December 1948.

They may be activated, in the main, by the same principles and the same beliefs in the values of education. But the human equation, which is always a part of every personnel situation, colors the emphases of the instructional program. Its background of tradition makes the institution more receptive to some innovations than to others. Institutional objectives, while they may be similar, are seldom identical. Many schools limit their scope to certain functions that they feel themselves best prepared to perform. Therefore, the best road to self-improvement in an institutional program is the road of self-effort—the development, through faculty and administrative cooperation, of the types of courses and procedures that are consonant with the individuality and the integrity of the institution. If a cloak of learning *is* borrowed from the wardrobe of college practices, the borrower must be prepared to alter it here and there if he wants a good fit.

If one is to be his own designer and builder in perfecting the structure of general education, where is the right place to begin? Undoubtedly, the first essential is a clear definition or understanding of the expected, or desired, outcomes of general education. Fortunately, educators are coming into closer agreement with respect to the nature of these objectives—particularly with respect to the areas of experience in which, or through which, the objectives are to be achieved. In the official report of the National Conference on Higher Education for 1947 the following abilities, or attainments, were enumerated as a kind of "definition" of the educated person: effective communication, intellectual curiosity and judgment, a sense of ethical and moral values, physical and mental health, preparation for family responsibility, better international understandings, better democratic citizenship, vocational adjustment, understanding of science and its relation to modern life, increased aesthetic appreciations and satisfactions. A shorter list may be presented, but most of the items mentioned would be subsumed, by implication, under broader headings.

Note that these objectives suggest immediately certain large subject-matter areas—particularly the humanities, social studies, and science—with groupings of individual subjects and related

courses in each area. Most colleges, even though they may retain the departmental system, recognize the importance of some kind of integrated program within these larger areas. To achieve this integration within the normal span of college experience many methods have been tried: a required sequence of related courses which would insure a sampling of the various fields of knowledge; a battery of orientation courses, or survey courses, which serve as an "introduction" to the broader areas of study; the development of basic general education courses, scholarly in character but selective in content, which emphasize the relation of knowledge in a given area to human problems and human experience.

I offer it as my firm conviction that no organizational method of achieving the objectives of education is so important as the attitudes and understandings that motivate the faculty who teach the courses. If the teacher is interested in what happens to his students, if he envisions the outcomes of education in terms of human behavior, if he measures the value of his own teaching by what it does to or for the student, most of the goals of general education will be in some measure achieved. In this kind of enlightened teaching no opportunity is lost to relate the disciplines of the subject to the problems of the learner. The objectives of general education run like lateral zones of emphases across the vertical columns of subject matter that constitute the average curriculum. "These points of intersection are the 'power points' at which a course, by appropriate subject matter and method, makes its most telling contribution to the overall functional objectives of the program [of general education]." [2]

It is too much to expect, however, that this kind of diligent opportunism on the part of the teacher will produce in all instances, or in most instances, educated people. Not because it *can't* be done, but because it *won't* be done. The traditional subject-matter-mindedness of most college faculties is something to be reckoned with. Surrounded by textbooks and syllabuses, and by stout-hearted colleagues and department heads who insist

[2] Roy Ivan Johnson, *Explorations in General Education* (New York: Harper & Bros., 1947), p. 51.

that the "ground must be covered" at all costs, even the most inspired teacher finds his "freedom to teach" limited by rigid course requirements and artificially imposed standards. Hence the importance and necessity, in a general education program, of course reorganization under institutional benediction and with the voluntary cooperative effort of the faculty concerned.

On the whole, the development of sound basic courses in the various areas—for example, humanities, social studies, science—holds the greatest promise for improved results in general education. The effort attacks the problem at its root; that is, relating learning to the needs of living. This becomes the first criterion in the organization of a general education course. Says Dean McGrath, "We are strongly of the opinion that unless the content of the [general education] courses is significantly related to the dominant problems of today, it will have little meaning to the student as an individual and our stated objectives may not be achieved." [3] It follows that the content for these courses will be highly selected. They will not be "thin" courses. Rather, they will challenge the best which the student and teacher have to give, since they will be hinged to human experience and human problems. The student will acquire knowledge for *use,* not merely for his notebook or his examination paper. Application becomes the test of learning.

Let us look at some of the approaches that have been made to the development of a basic course in the humanities. First, there are differences in the interpretation of the term. What *are* the humanities? In some programs, as at Stephens College, the basic course deals only with the fine arts—literature, painting, music, sculpture, architecture, dancing—with some application to what may be called the practical, or applied, arts. Sometimes, however, the whole field of communications is included in the humanities. More often than not philosophy takes its place as a member of the humanities family. History, too, defined as the guardian and interpreter of the cultural heritage of man [4] is

[3] E. J. McGrath, *et al., Toward General Education* (New York: Macmillan Co., 1948), p. 135.
[4] *Ibid.*, p. 133.

often given a humanities label. In its broadest interpretation, therefore, a basic humanities course must deal with the communicational ability, with aesthetic appreciations, with philosophic understandings, and with historical interpretations. (And unless religion is included, by implication, under philosophy, a fifth function must be added.) Needless to say, no single course (at least none with which I am acquainted) has undertaken so broad a challenge. The scope is too inclusive. "As a result," Dunkel points out, "if the humanities in recent years have felt themselves being crowded out of the curriculum, one reason for this pressure is the large area which they occupy within it." [5]

The types of organization that have been used in basic humanities courses are as varied as the courses themselves. It is natural that the pedagogical mind should seek a neat and orderly plan in which subject matter could be logically categorized and logical sequences preserved. It is apparent that if the course is to effect "integration in learning" on the part of the student, it must fall into some kind of organizational plan that will give it root and anchorage. But it is doubtful whether *one* plan, to the exclusion of all others, can ever be called the best for all teachers and all students. The one that has least to commend it is the "hodge-podge" plan, whereby a two weeks' study of sculpture is followed by two weeks of music, which is followed by two weeks of poetry, and so on through the year. It would take tight mortar indeed to hold the blocks together.

Among other types of organization that have been used are the following: (1) courses based on the historical development of the arts; (2) courses based on dominant ideas or "themes" as they have influenced artistic expression; (3) courses based on certain aesthetic principles which seem to be common to the different arts. The plan of organization which was finally adopted in the humanities course at Stephens College is related to the common principles approach, but is considerably more comprehensive. It follows the logical steps in observation and judgment in studying a work of art. The five headings utilized are back-

[5] Harold B. Dunkel, *General Education in the Humanities* (Washington: American Council on Education, 1947), p. 257.

ground (subject and function), medium, elements, organization, and style and judgment.[6] An advantage claimed for this type of organization is that it gives the student a tool with which he can study and evaluate different works of art in different expressional media.

After summing up the pros and cons of the critics with respect to various types of organization that have been attempted, Dunkel points out that most colleges that have been experimenting with a humanities course have rightly ceased to worry about trying to follow a single-type organization. "As an illustration we may cite chronological courses which preface the chronological sections of the course with some work on the aesthetic principles, or with a mosaic study of the elements of the various arts." [7] This observation supports the comment made earlier in this paper, namely, that a borrowed course is not as likely to fit the requirements of a particular situation as a self-built course. As new courses develop, I hope we shall see less imitation and more creative experimentation.

If the basic general education course is accepted as the best method of insuring an integrated experience for the student in the major areas of study, let us look for a moment at the plight of the humanities. Assume that a principle of parity has been declared and that a one-year course has been set up in the social studies, in the natural sciences, and in the humanities in order to give to the nonspecializing student a broad basis of understanding in these areas. It is obvious that the course in humanities cannot carry the load if to the study of the arts is added the study of philosophy and history as well as the obligation to improve the students' communicational abilities. The answer, I think, is four courses instead of one. In areas so disproportionate in scope no principle of parity can safely be followed. To attempt to crowd into one course the disciplines and understandings essential to an intelligent appreciation of our cultural heritage in the arts, in literature and language, in philosophy and history, is to create a lopsided curriculum that will produce lopsided personalities.

[6] See Johnson, *op. cit.*, pp. 78–88.

[7] Dunkel, *op. cit.*, p. 245.

We need a course in literature and the fine arts, followed by a well-packed exploratory course in literary masterpieces. We need a course in philosophy and history to open the doorways into the past and provide an understanding of man's actions and motives. And we need a basic course in communications that will diagnose students' shortcomings in the skills of reading, writing, and speaking (and even listening), and apply the necessary disciplines for improvement.

I particularly commend the course in communications on the ground that it brings into synthesis the various factors of communicational skill and relates them purposefully to life needs and to functional situations. If, however, the course is simply a patchwork of so many hours of composition, so many hours of reading, so many hours of making speeches, no great advantage can be claimed over the segregated training offered by the traditional courses. The first business of the course in communications is to discover the skill levels of the various students. Its next obligation is to raise these levels to as high a point of efficiency as possible. I do not regard the function of a communications course as wholly remedial. It is primarily developmental, and it will often reap its greatest rewards in the growth of students who, in preliminary tests, could skim by on a minimum standard of adequacy.

The communications teacher is contributing not only to the personal effectiveness of the student in future social and business relationships but also to his success as a learner—for the ability to communicate, to understand and use ideas, is an indispensable tool in every department of study. To quote Dean McGrath, again, "Unless the student can read and listen with perception, books and lectures will be of little avail; and unless he can write and speak with facility, his usefulness as a scholar and citizen will be impaired. . . . In a very real sense, skill with language is at once an appropriate part of the business of general education and a prerequisite to it." [8] Hence, in order to effect the maximum transfer from instruction to practice, communicational skills must be taught in relation to *use*—not abstracted from their

[8] McGrath, *et al., op cit.*, p. 53.

functional settings and treated as museum specimens under a glass bell.

The scope of this paper does not permit comment on the important contribution which the institution as a whole can make to the objectives of general education through practical applications in the life and environment of the campus. The study of music, art, and drama can be greatly re-enforced through college-sponsored concerts, exhibits, and productions. Walls of classrooms and halls can be made attractive. The aesthetic principle can be applied, in some measure at least, to the selection of furnishings. If it is the business of the college to teach art, it is also its business to *apply* art, within the limits of its ability. Likewise, the level of communicational ability can be appreciably raised if the interests of the faculty and of the administration converge upon it as a worth-while objective. Most teachers no longer shrug off their feeling of responsibility for at least moral insistence upon good English standards. Likewise, they are more and more concerned with the reading and study habits of their students. All this, of course, is as it should be, for the secret of success in general education lies first in the faith of the institution in its program and, second, in the cooperation of the total faculty and administration in attaining the end results.

The Place of the Community College in a State Educational System[1]

By ALVA R. DAVIS

WE OF THE WEST have been forced to a serious consideration of post-high-school educational problems because of a mass migration, with California on the receiving end. So great has been this migration that the California population increase since the 1940 census has been greater than the total population of any one of thirty selected states. While we must accept this migration, the social, economic, and educational problems these people have brought with them have been straining our capacity for adjustment.

The 1947 state legislature appropriated funds and authorized the setting-up of a committee to survey the needs of California in higher education. A committee of three was formed—one chosen from the University of California, one from the State Department of Education, and the third (Professor Emeritus George D. Strayer, of Columbia) was a selection of the first two. After an intensive study this committee (generally known as the "Strayer Committee") recorded its appraisals and recommendations in a comprehensive volume entitled *A Report of a Survey of the Needs of California in Higher Education*,[2] which appeared in March 1948. Most of the recommendations contained therein have been accepted by the legislature, the State Department of Education, and the university, and they now constitute a plan for future developments. My discussion of the community college is in the light of this far-reaching plan.

It would be well to sketch briefly the higher educational system

[1] A condensation of an address delivered before the Arts and Science Division, Association of Land-Grant Colleges and Universities, November 10, 1948, Washington, D.C.

[2] *A Report of a Survey of the Needs of California in Higher Education*, Submitted by the Liaison Committee of the Regents of the University of California and the State Department of Education (Sacramento: Committee for the Survey of the Needs of California in Higher Education [Library and Courts Bldg.], March 1, 1948).

now in operation in the state. There are two main administrative areas. The University of California in its many state-wide parts is administered by a board of twenty-four regents—sixteen appointed by the governor and serve sixteen-year staggered terms; eight are ex officio members. The primary and secondary school system, the two-year junior (community) colleges, and the four-year state colleges function under the State Department of Education, the director of which is also appointed by the governor. This director is one of the ex officio members of the university Board of Regents.

The university is charged with responsibility for education at the higher professional, academic, and graduate levels. These responsibilities are not defined in detail by law; instead, the regents, acting as agents of the state, operate under a very broad corporate charter. Since this is a constitutional provision, the legislature cannot directly alter the university's program, and this freedom from political control permits the regents to set up a long-range plan for development with considerable assurance that it will not be altered at the whim of political groups. The further fact that a governor may fill vacancies on the board but cannot discharge a member (except by impeachment) makes for stability.

The emphasis on higher academic and professional training, graduate work, research, and the selection of students characterizes the university and qualitatively sets it apart from institutions of collegiate grade administered by the State Department of Education—the junior and state college local-area type which make up the group generally known as "community colleges." The emphasis of this group is on preparation for advanced academic and professional work and particularly on vocational and semiprofessional training. In order to meet regional responsibilities and carry out the program allotted to them by law, they at present place no scholastic barrier to admission other than high school graduation. In making the above distinction, there is no intent to place one program above the other: each has its important place in the state's educational system. Moreover, these are not unrelated parts—the California plan involves one inte-

grated system. The guiding principle governing educational support by the state is that society has responsibility for the maintenance of a system of education and training that will best develop its youth to the fullness of individual capacity. Since individual talents vary, the system must contain educational and training elements devised to care for diversity of need.

The Place of the University

The legal freedom of the regents to fix policy has enabled them to establish the standard of entrance to the university they alone deemed wise. They have determined that admission is not the automatic right of every high school graduate—rather that the secondary school record of the applicant must demonstrate definite promise of capacity to profit by instruction at the university level. Actually, approximately one out of five high school graduates—that is, the upper 20 percent—qualifies for admission.

The Strayer Committee has recommended that enrollments on the Berkeley and Los Angeles campuses be held to 20,000 each, and that the lower-division demands be met in the main by the junior and state colleges through their academic and preprofessional training programs. In spite of the scholastic barriers to admission, the university has steadily increased in enrollments, with the chief pressure on the Colleges of Letters and Science at Berkeley and Los Angeles. On the former campus the college has about 55 percent of the local enrollment, that is, approximately 13,000 students.

It has appeared desirable, therefore, in order to keep total campus enrollments within control and at the same time permit major emphasis at the upper-division and graduate levels, to erect off-campus four-year liberal arts colleges. Such a college is in full operation at Santa Barbara. Plans are complete for a second in connection with the College of Agriculture at Davis, approximately seventy-five miles from Berkeley, and for a third at Riverside, about the same distance east of Los Angeles. These three liberal arts colleges are within the framework of the university; standards for entrance, continuance, and graduation will

ultimately be the same, and transfer from one to another, or to the Berkeley or Los Angeles campus will be made a simple procedure.

It is not expected that these separated university liberal arts colleges will offer graduate work, nor will it be possible for such colleges to provide as rich a field of major programs as are obtainable on the main campuses. But the programs will be comparable to those of the best of the privately endowed liberal arts colleges; they will be directly integrated with the university; they will have carefully selected faculties; and, from a financial point of view, they will have the same assurance of support as does the remainder of the university.

Such liberal arts colleges, in addition to spreading the load of the university, will, by reason of their geographical location, take on some of the characteristics of a community college in that they will function as local-area cultural centers. They will also serve as natural focuses for the university extension program, particularly for the extension classroom instruction, and for its lecture, music, short-course, and institute services.

The influence of these new and projected liberal arts colleges on the university undergraduate distribution pattern is for the future to disclose. The effect of the nonuniversity junior college is not uncertain; it has been most significant both as a safety valve and as a modifier of undergraduate distribution. Our total full-time enrollment on the Berkeley campus in the fall of 1948 was 23,145, distributed as follows:

	New Students	Old Students	Total
Freshmen	2,100	502	2,602
Sophomores	843	3,875	4,718
Juniors	1,796	3,644	5,440
Seniors	451	4,604	5,055
Special	167	594	761
Graduates	1,891	2,678	4,569
Total	7,248	15,897	23,145

The significance of these statistics lies in the internal distribution of the student population they show. The striking tend-

ency is for more and more students to take their lower-division preparation in the junior, or community, college and to transfer to the university during their second or third year. This produces three profound effects on the university.

First, there is a consequential emphasis on advanced undergraduate, professional, and graduate programs, and this enables the university to develop to its fullest stature; second, it acts to increase the average university student maturity; third, the community (junior) college functions as an important screening device, which automatically simplifies the university's problems and tends to reduce the large numbers of incompetent, poorly prepared, or maladjusted students. This guidance service and the designed, or accidental, screening performed by the community college are two of the fine contributions the local-area institution makes to the university.

Guidance service is most needed at the community college level. This is the point where many students are uncertain of what they want to do or in what field their particular talents, if any, lie. We all too frequently say there are too many students in the university. This may be true, but we cannot rid ourselves of responsibility by raising entrance standards and then making faces over the scholastic fence at those excluded. Before students ever reach the university, they should receive all the expert guidance that present knowledge of human behavior permits. It seems beyond refutation that the earlier one is steered into interests best adjusted to his genetic pattern, the better. The high school is not too early; the two-year community college with its combination of academic and vocational interests would seem to be the logical place, the critical location, for appraising student potentials, the place for the student to find himself.

So far I have stressed the university as a part of the total higher educational plan: it provides the advanced levels of education and is a state center rather than a local-area center. But it is not an isolated part of the system; to be effective it must be articulated with the other parts. Despite the fact its direct concern is with that fraction of the total student population possessing unusual scholastic capacities, its general concern must be to

raise the achievement level of the society of which it is a part. To this end it must have more than a detached interest in those elements of the system where the direct concern is with other educational levels and with other programs. It cannot set itself apart from the high school or the community college—there are too many interrelated problems. Permit me now to turn to a consideration of these other components of the higher educational system with particular reference to the development of the community college.

The Place of the Community College

The community college is not a new concept, or even a new part of our educational system. It represents an evolutionary development. The President's Commission on Higher Education as well as Dr. Conant in his recent book *Education in a Divided World* both emphasized it in a way that seemed to imply newness, if not originality, but I find they are discussing our old friend, junior college.

What is a community college? How does it differ from other colleges? What are its goals, its functions? How does it fit into our educational system? Is it educationally sound? Does it come into conflict with, or serve as a desirable adjunct to, the university? Does it invade the field of the privately endowed liberal arts college and thus serve as an additional threat to the survival of that valuable institution? Do the budgetary requirements for such units jeopardize adequate support of other well-established and justifiable educational activities? I do not intend to answer all these questions, although I will consider the more important of them.

The Report of the President's Commission on Higher Education states, "The purpose of a community college is educational service to the community." While this statement is elaborated later on in that report, it is, as it stands, too limited, too loose. The community college does not include all "educational service"; rather, it is limited to "educational service" of certain kinds. It is educational service which has to do with local-area post-high-school needs below the professional, undergraduate

major, and graduate levels—and for the adult as well as youth. It is concerned with both formal and informal educational programs, with training as well as education, with the vocational and cultural needs of the local area as well as with preparation for advanced training at higher levels elsewhere. The ideal community college is the cultural center of the local area; it is sensitive to the needs of the community, but it should not merely strive to satisfy these needs; it should exert positive cultural leadership.

The first junior college in California was established in 1910 under a law permitting high schools to offer post-high-school courses in academic subjects. The law was the result of local-area pressure based in turn on economy as well as on parental solicitude. There followed the setting-up of many similar junior colleges, organized either as adjuncts of high schools or as independent two-year institutions. They were then, and have continued to be, developed within the administrative framework of the secondary school system rather than that of the university. They are tuition-free and are financed locally by assessment districts, with some state aid, based, as is the high school, on average daily attendance.

There are now about fifty public junior colleges in the state with a total enrollment in 1947 of well over 60,000, or an average of approximately 1,000 per unit. And the estimates are that California may look forward to a total college student population in 1960 of approximately 228,000. I do not refer to youth of college age, but to the number expected to attend an institution of collegiate grade if the present ratio holds. We can also estimate that if the present percentage is maintained, the community college must be geared to care for approximately 40 percent of the above number.

The first junior colleges were not community colleges in the sense used by the President's Commission; instead, they limited their programs to the first two years of a liberal arts program with only a slight sprinkling of nonacademic subjects. As previously stated, the present community character of the college, with its occupational emphasis, is the result of an evolutionary

process, stimulated in part by outside educational forces, in part by local pressures.

The various factors which were involved in the original establishment of the junior college were supplemented by a more important one as time went on, that is, the extraordinary increase in student population of collegiate age, an increase which demanded either tremendous university expansion, or provision for local institutions. The entire movement could have got out of hand during this formative period had it not been for the wisdom of certain educators and citizens who saw in this local eagerness to have a college an opportunity for accomplishing two worthwhile ends: (1) strengthening the university by draining from it a great flood of students whose academic educational needs could be taken care of locally for the first two collegiate years; (2) the utilization of the junior college as a screening device for the university. Many students who desired post-high-school training would probably find their outlet in occupational-terminal programs.

This later broadening of the program and shift in emphasis was not a simple matter. There were those who strongly believed that the primary function of the high school was college preparation, and there were those in the junior college who considered its curriculum should embrace the first two years of a collegiate academic program and no more. Indeed, vocational subjects were looked upon as intrusions, and the teachers of them as of a definitely lower caste. This attitude has largely disappeared in California. The academic subjects are given as much stress as formerly for those who desire them and can profit by them, but, in addition, there is a recognition that the interests of those who have no desire to take further academic work are also important. If the community college can search out the interests of this group, can train it in good ways of making a living and at the same time awaken an appreciation of responsibilities as citizens and a sense of social values—if it can do this as well as provide an academic springboard for college—it will be performing a most remarkable educational service.

There is much evidence that parallel or associated academic

and vocational programs are successful. Let me give you two examples, one a large city community college, the other selected from a small city and rural area. The students from both on transfer to the university demonstrate sound preparation in academic and preprofessional fields, and the two have excellent reputations for vocational training. The large city unit is the City College of San Francisco, and the rural representative is Riverside College in the citrus belt east of Los Angeles. The San Francisco City College is of special interest since in the same city is the four-year San Francisco State College, a remodeled state normal school, and across the bay is the Berkeley campus of the University of California. Despite this seeming competition from other public tuition-free institutions, the City College functions successfully in its own field. This college has a staff of 240—176 men and 64 women, and of these 34 possess the doctorate, 123 the master's, and 58 the bachelor's degree. Most of those with the bachelor's degree teach vocational subjects. The catalog lists the following fields of instruction: in the humanities and social sciences are art, anthropology, English, economics, education, history, music, philosophy, psychology, political science, sociology, and speech. Foreign languages are represented by Latin, French, German, and Spanish; the sciences by anatomy, astronomy, bacteriology, botany, biology, chemistry, geography, geology, physiology, and zoology; the vocational area by business education, business administration, engineering, floriculture, home economics, hotel and restaurant management, law enforcement, photography, and recreational leadership. Truly a most amazing assortment of offerings. This two-year college has an annual budget of $1,600,000, and its buildings, grounds, and equipment are appraised at $2,283,000. It has a credit and noncredit, night and day enrollment of almost 8,000, four-fifths of whom are taking semiprofessional and vocational-terminal programs. This represents a de luxe edition of the community college.

Riverside College is a typical medium-sized community college, first organized as a part of a high school district and later reorganized under the California district junior college law. Its

program and its service are well adapted to local-area needs, and it functions in a most remarkable manner as a cultural center. It not only conducts its regular academic and occupational courses, but also sponsors noncredit lectures, music and drama offerings, and short courses of varying lengths for housewives, businessmen, farmers, and other groups in the community. The citizens are very proud of their college and support it generously. They do not look on it as a tax burden but rather in the same way they do the support of their own families. The total regular session enrollment in 1946–47 was 5,763 of which 1,128, or less than one-fourth, were in the academic program and 4,635 were in occupational curriculums. I believe this signifies that the college administration is especially alive to opportunities for direct community service, and that because of careful student appraisal and guidance it is restricting preparation for advanced academic or professional work to those who demonstrate high capacity. This institution approaches the community college ideal.

Recently many of the junior colleges, particularly those in the larger centers, have become officially known as city colleges, and the term junior college with its implied lesser academic stature is gradually disappearing in the state. Thus we have San Francisco, Los Angeles, Visalia, and Riverside City Colleges. The new designation raises the prestige of the faculty, adds dignity to the institution, and, practically, tends to set it off more sharply from the high school, with which in certain cases it has been too closely identified for the proper development of a broadened program. It is no longer looked upon as something inferior to four-year colleges or to the university, but rather as different only in the kind of opportunities. Indeed, I have had students complain that certain courses which they desired could be obtained at their home city college but not at the university!

The Place of the State College

The picture of the community college in California as a part of the educational system would not be complete without reference to the state college with its four- and sometimes one- and

two-year terminal programs. During the period when the junior college was undergoing its scholastic metamorphosis, the state normal schools were also undergoing change—again, both in name and program. Originally they were established for elementary teacher training exclusively. Gradually the offerings both in liberal arts and in vocational subjects were expanded on the argument that new demands on the teacher required a greater breadth of preparation as well as more intensive training in certain subject-matter fields. In 1927 the state legislature changed all normal schools to teacher colleges with centralized control lodged in the state director of education and the following year authorized the granting of the B.A. degree. In 1935 the name was again changed, this time to "state college," and authority given to expand its offerings greatly. In 1946 the state colleges, six in number, were given permission to offer graduate work leading to the general secondary credential. This credential in California requires one year of graduate study but does not necessarily involve the master's degree. At present the state colleges have no authority to grant advanced degrees.

We thus find the original normal school expanded its liberal arts and occupational programs, but kept the major emphasis on teacher training. There was an easy transition, on the one hand, from the liberal arts fields to preprofessional and liberal arts major preparation and, on the other, from vocational training for teachers to vocational and semiprofessional two- and four-year terminal programs. Confusion arose as to goals and functions, which is not yet completely clarified. It has taken on the functions of a liberal arts college without having succeeded in capturing the spirit. Its one- and two-year terminal occupational programs, in general, have not been developed with that clarity of purpose which has been demonstrated by most junior colleges. I am afraid there is an ambition to expand programs rather than develop excellence in the more restricted, but highly important, field of teacher education and teacher training. The Strayer Committee regards the state college as being primarily concerned "with the education of teachers and with courses which prepare for occupational competency at a degree level. They

should be only secondarily responsible for general liberal arts major programs, or preprofessional or academic preparation for advanced or graduate work. They should not be granted authority to conduct graduate work involving research for professional training other than teaching."

The Administration of the Higher Education Units

Athough the meshing of educational gears is not yet as smooth as one would wish as far as the state college is concerned, I believe the positions of the university and of the two-year community college with respect to purpose are fairly clearly defined and understood. The point as to whether the junior college should be administered as a part of the high school system or be given a distinct and separate place, can be debated. We have both types of organization in California, the distinction being based largely on local economic considerations rather than on educational criteria. On this latter basis alone I confess a "reasoned prejudice," if such be possible, in favor of the separate institution, particularly in the light of its development as a community college. The data on faculty competence indicate that such an independent college—one freed from high school administrative linkage—can attract a better-trained staff and a staff chosen to develop its distinctive program. There is a disinclination on the part of staff members to participate in both high school and junior college teaching.

In a few cases the junior college has developed as the lower-division element in a four-year state college. This is held by the Strayer Committee to be undesirable, particularly from the point of view of administration—I believe it is also educationally unsound. The junior college, as previously indicated, is financed as a part of the secondary school system, that is, districts are organized and local tax assessments levied. While this support is augmented by a state subsidy on the basis of average daily attendance, the primary responsibility is lodged with the citizens of the local district, and the controlling governing board is local—two important points in the development of a community college. The

state college, on the other hand, is financed entirely out of the general funds of the state, and administration is centered in the State Department of Education. To combine the two, therefore, would develop administrative and budgetary complexities and confusions. Such associations are disappearing, and the three new state colleges proposed by the Strayer Committee will be organized independently of existing junior colleges in their vicinity.

These varied developments of which I have spoken are modifying the university and are themselves being modified by the university. Because of the assumption by the community college of the great task of caring for the major portion of the lower-division load, the university tends more and more to become an upper-division and graduate institution. In my opinion this is a desirable trend. It does not mean that the university will do away with its own lower division, but it does mean that it will select more carefully—placing emphasis on those with definite promise of high scholastic attainment. The university will receive most of its students as transfers from the community college at the junior level. These must meet the raised standards for admission; therefore, we must have a sympathetic and helpful interest in the quality of academic and preprofessional preparation given at that college. Even more than this—we must aid in the solution of the basic educational problem confronting the community college—that of so combining education with occupational training as to produce not merely a trained individual but one with some understanding of the social medium in which he must use his training.

There are problems, of course, in the university–community college relationship. These chiefly relate to the equating of academic courses, and particularly courses involved in preprofessional preparation. Some of our professional school faculty have established excellent working relationships with their community college colleagues. There is an eagerness for such associations on the part of the college staff, and we should build on it. Often the university has made what seemed to it to be de-

sirable curricular changes, but without reference to the interests of the community colleges—without consulting them or giving them time for adjustment. This is not good common sense; we must give as well as take; we have a common general purpose.

From our varied and extensive experiences with the community college since its beginning in California in 1910 there has been a distillation of general conclusions which will undoubtedly serve as guiding principles in future education developments. There is an acknowledgment that society has the responsibility for developing youth to the fullness of inherent potentiality; that such inherent capacity varies with the individual, hence what is good training for one may not be the best for another (that is, a broad plan of education must provide for the needs of diversely equipped individuals); that in a democracy the local citizen should have both a direct interest in and a large responsibility for the educational and training needs at the community level; that these two general educational programs, that of the university and that of the community college, do not conflict, but actually comprise two intimately related parts of a common whole and as such, if properly devised and administered, add strength to each; that the inclusion of local units in the higher educational plan, interrelating local and state-wide programs, should develop a broad awareness of problems and needs in education which in turn should tend to raise the average educational level.

Implementing the Report of the President's Commission on Higher Education

A Case Study for Pennsylvania

By ALFRED B. BONDS, JR.

SINCE THE FORMAL CLOSING of the affairs of the President's Commission on Higher Education in April 1948, the question has often been raised as to what practical steps are being taken to "implement" the recommendations of the Commission.

The question is being answered in many ways in many parts of the country. The Commission dealt in a far-ranging way with a national problem of great importance. The Commission addressed its recommendations to no one agency or group, but to the American people generally. There were, of course, specific suggestions directed at what the Commission regarded as required renovations within the academic world. But the total report was addressed to the American people, including the academic community, and constituted a standing invitation to all to examine carefully the role of higher education in American democracy.

A detailed and painstaking study of the Commission's report is taking place in at least one of our major state universities. It was the privilege of this writer to be invited during the summer of 1948 to serve as a consultant at the Pennsylvania State College Workshop on Higher Education. There, under the leadership of Dr. Albert Lindsay Rowland, a group of Pennsylvania educators were using the Commission's volumes as texts for their discussions of current problems in higher education in Pennsylvania. It was equally gratifying to find that President Ralph Hetzel had appointed a distinguished standing committee of his faculty to study the Commission's reports and offer recommendations as to how the Commission's suggestions might be implemented by the Pennsylvania State College.

Late in July 1948 these two groups were joined by a state-

wide gathering of superintendents and principals from Pennsylvania's secondary schools. Under the general theme "Pennsylvania's Future through Education," the Superintendents and Principals Conference led off with a discussion of how the report of the President's Commission might best be implemented in the public schools of Pennsylvania. Of greatest interest to this group was the Commission's proposal for a tremendous expansion in the so-called "community college" movement.

The Commission's recommendation for free public education through the thirteenth and fourteenth grades represents one of its major proposals. The Commission had set its judgment of the dimensions of higher education in a noble frame:

> Equal educational opportunity for all persons, to the maximum of their individual abilities and without regard to economic status, race, creed, color, sex, national origin, or ancestry is a major goal of American democracy. Only an informed, thoughtful, tolerant people can maintain and develop a free society.[1]

The Commission recognized that the primary barrier to the achievement of this announced goal is economic. Further, they realized that one of the major elements in the economic barrier is the cost of room and board away from home. Another important factor is the increasing spiral of tuition costs. The Commission struck at both of these impediments to full educational opportunity and proposed the great upward extension of the free public schools to accommodate all who had the talent to continue their studies.

It is difficult to give tangible form to the incidence of "talent" in our population. The Commission's formula for meeting this problem is now well known. The judgment was based upon the most massive testing program in history—the results of more than 10,000,000 scores made on the Army General Classification Test during World War II. The Commission equated these data against traditional college entrance examination scores

[1] *Higher Education for American Democracy: The Report of the President's Commission on Higher Education,* II: *Equalizing and Expanding Individual Opportunity* (Washington: Government Printing Office, 1947; New York: Harper & Bros., 1948), p. 3.

and arrived at the conclusion that 49 percent of our population could profit by two years of college educational experience. The tests indicated also that 32 percent of our population could complete successfully an advanced liberal or specialized professional education. For purposes of computing the size of possible enrollments under this formula, the eighteen- and nineteen-year-old group was taken as that segment of the population most likely to be enrolled in the thirteenth or fourteenth grade. Similarly, the twenty- and twenty-one-year-old group seemed to represent the population group most likely to be enrolled at the senior college level. The Commission computed that 49 percent of the eighteen- and nineteen-year-old population and 32 percent of the twenty- and twenty-one-year-old population anticipated by 1960 would amount to at least 4,600,000 American young people who should be enrolled in college at that time.

It is believed by certain members of the academic fraternity that no good can come from the effort to provide the widest possible opportunities for higher education. The Commission felt otherwise:

> . . . .We have proclaimed our faith in education as a means of equalizing the conditions of men. But there is grave danger that our present policy will make it an instrument for creating the very inequalities it was designed to prevent. If the ladder of educational opportunity rises high at the doors of some youth and scarcely rises at all at the doors of others, while at the same time formal education is made a prerequisite to occupational and social advance, then education may become the means, not of eliminating race and class distinctions, but of deepening and solidifying them.[2]

It should be emphasized that the Commission was deeply aware of the existing shortcomings in the educational system. In advocating a great expansion of facilities, the Commission in no sense intended that there be an uncritical continuation of the scandalous inanities of thought which have characterized certain academic offerings. It was, however, the clear intent of the Commission that the most consecrated efforts should be

[2] *Ibid.*, I: *Establishing the Goals*, 36.

made toward a constant improvement of the content and the methods of our educational process. A wise man once said that "Education is like democracy—it can only be saved by increasing it. We keep as much as we have by getting more."

But how can we get more? That was the question which the Superintendents and Principals Conference faced at their 1948 meeting. The Commission had identified the economic handicaps as the *bête noir* of most of America's gifted youngsters who were unable to continue their studies at the college level. This conclusion is dramatically reinforced with the fact that in 1946 one-half of the families in this nation had an income of $2,600 per year or less. It is scarcely realistic to think of the median-income family being able to provide the $1,000 per year which in 1947 was the *average* cost of a year in college. Nor does the total answer lie in the vast program of fellowships and scholarships recommended by the Commission. Inevitably, the data available seemed to suggest to the Commission that the most effective solution lay in the wide-scale development of community colleges.

It is an admittedly difficult task to establish one college. It is all the more complex to undertake the creation of a series of institutions geared to the pattern of pressing state-wide needs. The Commission recognized these difficulties and consequently identified certain large principles relating to the establishment of community colleges. Fundamental among these principles is the necessity for state-wide planning. These community colleges should not serve local needs alone. Each community will have its peculiar needs toward which its college should build, but no one college would be able, or should try, to satisfy the educational needs of all of the citizens within its area. The local institutions would be expected to choose the fields in which it seemed most desirable for them to develop their strength, but those choices could best be made in terms of a state-wide pattern.

Pennsylvania affords an ideal case study of the possible implementation of the community college phase of the Commission's report. In November 1948 the Pennsylvania Committee on

Post-High School Education proposed to the governor and the General Assembly the creation within the State Department of Education of a Division of Higher Education. Among other things this division would be assigned the task of determining the state's need for junior, or community, colleges. The recommendation actually represents a residual objective of the Committee on Post-High School Education. The committee, formed in October 1947, was originally charged among other assignments with exploring the state's need for junior, or community, colleges. At the time of the legally established deadline of November 15, 1948, however, the committee had been unable to complete its studies on this problem.

Dr. George A. Works, director of the Pennsylvania post-high school education study, and Dr. Carl E. Seifert, executive secretary of the Pennsylvania Association of Colleges and Universities, announced at the beginning of the project that their inquiry would cover not only the educational resources of the state, but the existing and future needs as well. President Herbert Spencer, of Bucknell University, president of the Pennsylvania Association of Colleges and Universities and a member of the Committee on Post-High School Education, estimated that ". . . fifty percent of our more able students graduating from high school do not continue their education in our institutions of higher learning."

Other facets of the Pennsylvania study were to have included: engineering education and technical instruction; post-high school education in agriculture; population trends and distribution within the state; teacher education; medical education; dental education; and nursing education. It is regretable that the committee was unable to follow through with its broadly conceived plans for this inquiry. In its present form their report[8] calls for a continuation of their studies. One of the major recommendations in the November 15, 1948, version of their study

[8] *Findings and Recommendations of the Committee on Post-High School Education: A Report to the Governor and General Assembly of the Commonwealth of Pennsylvania from the Joint State Government Commission* (Harrisburg, Pa.: Joint State Government Commission, Capitol Building, 1948).

cites ". . . a definite need for some type of post-high school education of less than a four-year college curriculum. It should be on a subprofessional basis with one or two year terminal courses. . . ."

If the Pennsylvania committee's recommendations for a continuation of its studies are received favorably, the scholarly heirs of this inquiry will shortly be facing prototypes of the same problems which the President's Commission faced as it attempted to define the dimensions of the national educational program. What should be the dimensions of Pennsylvania's program of higher education? For purposes of our present speculation let us apply to the Pennsylvania situation the same basic formulae used in the Report of the President's Commission.

In the academic year 1947–48, there were 142,280 students enrolled in Pennsylvania's 111 institutions of higher education. The Bureau of the Census has estimated that there were in Pennsylvania in 1947 a total of 725,000 persons between eighteen and twenty-one years of age. This means that 19.8 percent, nearly one-fifth of Pennsylvania's youth of college age, were enrolled in college. A fraction of this percentage must be discounted because of the veteran enrollment which represents a borrowing from an older age group.

The United States Office of Education has estimated that there will be 604,000 youth of college age in Pennsylvania in 1952, and that by 1960 this number will have increased to 635,000. Let us assume that Pennsylvania is a typical state in so far as the distribution of intelligence and age groupings is concerned. On this basis let us apply the Commission's formula to arrive at the number of young people who *should* be in college in the years ahead.

In 1952 if 49 percent of the eighteen- and nineteen-year-old youth were enrolled in college, the colleges would have 134,000 students at the freshman and sophomore levels. This is less than 10,000 short of the total enrolled at all levels during the 1947-48 academic year. By 1952, also, under the Commission's formula, Pennsylvania would have an additional 100,000 students studying in their junior year or above.

In 1960, in order to have 49 percent of the eighteen- and nineteen-year-old youth enrolled in Pennsylvania colleges at the freshman or sophomore levels, a total of 163,000 registrations would have to be reached. At the same time, if 32 percent of the twenty- and twenty-one-year-old group were enrolled, there would be an additional 94,000 college students registered at the junior year or above. This combined enrollment of 257,000 will be equivalent to roughly 40 percent of Pennsylvania's estimated population between eighteen and twenty-one years of age in 1960. It will be noted that this is a 100 percent increase in the total 19.8 percent segment of the college-age group attending Pennsylvania colleges during the 1947–48 academic year. This projection, therefore, seems directly in line with President Spencer's observation that only one-half of Pennsylvania's able youth now continue their formal training beyond the secondary schools. The Office of Education figures seem to indicate by 1960 a substantial drop from the 1947 level in the over-all population in the college-age bracket. Consequently, the projected enrollment of 257,000 in 1960 is only an 80 percent increase over the registration of the 1947–48 academic year. This is a gross numerical gain of 114,720 students.

Let us further assume for purposes of this projection that Pennsylvania's present 111 institutions will continue to grow over the next twelve years. A 10 percent increase in their total presently swollen registration would leave roughly 100,000 students yet to be accommodated if the intellectually able youth of the state are to be given equal educational opportunities. If we accept this figure of 100,000 as the tentative increment for which Pennsylvania shall need to plan, we can then move to some further interesting projections. Table 1 presents a summary of our projections up to this point.

It should be assumed that all of the expansion of enrollment at the junior year or above will occur in already-established four-year institutions. The figure of 100,000, then, represents the number of freshman and sophomore students for whom facilities will be needed by 1960.

The Commission has established a space requirement of

TABLE 1

PROJECTIONS ON COLLEGE ENROLLMENT IN PENNSYLVANIA: A CASE STUDY OF THE RECOMMENDATIONS OF THE PRESIDENT'S COMMISSION ON HIGHER EDUCATION*

	Estimated College-Age Population in Pennsylvania (18–21)	Total Number Enrolled or Expected To Be Enrolled	Percent of Total Age Group Expected To Be Enrolled	Numbers To Be Enrolled in 13th and 14th Grades (49%)	Numbers To Be Enrolled in 15th Grade or Above (32%)	Numbers To Be Accommodated in Existing Institutions Based on Projected 10% Expansion in the Current Enrollment
1947	725,000	142,280	19.8	78,000†	64,000†	.....
1952	604,000	234,000	38.0	134,000	100,000	.....
1960	635,000	257,000	40.0	163,000	94,000	156,000‡

* Adapted from *Higher Education for American Democracy*, I: *Establishing the Goals*, and also from unpublished estimates furnished by the United States Office of Education.
† Estimates of probable distribution of enrollment during the 1947–48 academic year.
‡ Sixty-two thousand in the thirteenth and fourteenth grades, 94,000 in the fifteenth grade and above.

155 square feet per student. This estimate is based upon careful joint studies which were developed by the U.S. Office of Education and the Federal Works Agency. This formula places the total new space requirements for the community colleges in Pennsylvania at 15,500,000 square feet by 1960. The Federal Works Agency estimates that on the basis of 1947 construction costs the average academic building may be erected and equipped for about $18 per square foot. On this basis it will cost $279,000,000 over the next twelve years to provide for Pennsylvania the physical plants required by the new community colleges. This sum prorates at about $24,000,0000 per year. It is certain that considerable savings could be made in this amount through such devices as cooperative purchasing, cooperative architectural services, and careful attention to related economies. The Commission has recommended that the federal government bear one-third of the costs of these new buildings. The remaining $16,000,000 per year would come from state or local sources, or both.

In Volume IV of the Commission's report, *Staffing Higher Education,* it is recommended that every effort be made to maintain a maximum student-faculty ratio of 20 to 1 at the freshman-sophomore level. This figure is flexible, of course, and at best is only a convenient basis for estimates. Within this

framework, the 100,000 students in Pennsylvania's proposed new community colleges will require at least 5,000 teachers. This figure does not include any increments necessary to offset present shortages. The recruitment and preparation of these faculty members and their administrators is a massive task and should evoke some constructive innovations in the training of college teachers. These proposed innovations are discussed in detail in Volume IV of the Commission report. The Commission has also suggested that the federal government share in the cost of faculty salaries. This federal aid, according to the Commission, should be apportioned among the states on an equalization basis. Each state's share should be determined by an objective formula designed to measure the state's relative need for higher education and its relative ability to finance an adequate program.

The estimate of the cost of equipping the new plants does not include the cost of library books. The American Library Association, at the request of the Commission, has stated its belief that a minimal amount of $18 to $25 per student per year is required for an efficient college library. If we consider that $20 per student is a reasonable average, it will be necessary to include an additional $2,000,000 per year for library books as a part of the operating cost of these new institutions.

On quite another front, it is interesting to calculate how much benefit the state of Pennsylvania would receive from the vast federal scholarship program which has been proposed by the Commission. The recommendations of the Commission contemplated a 1948–49 program whereby at least 20 percent of the undergraduate nonveteran students would be eligible for federal scholarship grants. These grants would be made on the basis of individual need coupled with the requisite qualifications of total personal abilities and interests. This 20 percent segment would increase numerically as the number of veteran students decreased. If the Commission's proposals are followed, the number of grants will increase until 1960 when there would be aid for more than 1,000,000 undergraduate students throughout the nation.

These awards, limited by Commission recommendation to $800 per student per year, would be distributed throughout all of the states on a two-point formula: first, the amount of a state's allocation would be determined by the proportionate number of high school students graduating within the state in a given year in relation to the total number of high school students graduating in that same year throughout the nation; second, the allocation of funds would rest upon the proportion of the young people in the eighteen- to twenty-one-year-old age group in residence in the state as compared with the total eighteen- to twenty-one-year-old youth in the total population in the same year.

The estimated population of the United States in 1960 will include 9,699,000 youth between the ages of eighteen through twenty-one. The U.S. Office of Education estimates that 635,000, or about 6.5 percent, of these young people will live in Pennsylvania. If we can also assume that Pennsylvania will have 6.5 percent of the high school graduates in 1960, this means that the state would be eligible for 6.5 percent of the estimated one billion dollar total scholarship funds—a sum equal to about $65,000,000, to be apportioned among Pennsylvania's young scholars.

In still another area, the Commission is convinced that while no minimum enrollment figure is universally applicable, institutions with fewer than two hundred full-time students, or the equivalent in part-time students, in the thirteenth and fourteenth grades seldom can operate sufficiently strong programs without excessive cost. There should be little problem here in so far as the state of Pennsylvania is concerned. The 1940 census revealed in Pennsylvania approximately one hundred cities with a population of 10,000 to 20,000. A total of thirty-seven additional cities showed populations ranging from 20,000 to 2,000,000 persons. There were about eight hundred incorporated municipalities, which shows an excellent distribution of population. It should be relatively easy to follow the principle of locating new community colleges to be within reach of the largest possible proportion of qualified young people.

The preliminary step to the organization of these new institutions is the enactment of permissive legislation under which communities will be authorized to extend their public school systems through the fourteenth grade. But even if all of the local communities in the state with population and financial resources great enough to justify establishing community colleges should do so, there would be large areas of the state which were not served. There would be many municipalities far too small to attempt to extend their academic offerings. Yet their young people must have the same opportunity to continue their studies as those youth living in more populous centers. This is the basic reason for the Commission's recommendation that the planning for these new institutions should take place on a statewide basis. Special efforts should be made to preserve the greatest flexibility in the methods of control and support of these new colleges so that they may fit easily into the state's present educational pattern.

Thus far this "case study" of Pennsylvania has been concerned primarily with some of the more obvious mechanical aspects or physical dimensions of higher education within the state. It should not be forgotten, however, that the major consideration in implementing the Report of the President's Commission on Higher Education is a rigorous examination of the objectives of higher education and of the tools whereby these objectives are to be achieved. The examination of tools and objectives does not lie within the purview of this essay. It is interesting to record, however, that in addition to the State-College discussions already mentioned at least one other Pennsylvania institution is actively engaged in considering philosophical aspects of the report. President Paul S. Havens, of Wilson College, Chambersburg, Pennsylvania, writes that his faculty established a committee informally to explore the report. In a series of four meetings held thus far, this group has ranged through many of the Commission's most important suggestions. Dr. Francis J. Brown, executive secretary of the Commission, was invited to lead a summary session at the conclusion of these discussions. Significant also is the fact that Dean Lyman Jackson of the

State-College group was a prime mover in the exhaustive and penetrating consideration given the Commission's report at the 1948 session of the Association of Land-Grant Colleges.

This ferment of thought about the Commission report within the state of Pennsylvania achieves an objective which is highly regarded by every member of the Commission. This group sought in their report to achieve a pronouncement on common ideals. They recognized that the realization of these ideals traditionally lies within the initiative of the individual scholar. It is to be hoped that the Commission's definitions will secure active adherents. It is even more to be hoped that the Commission's efforts to identify common ideals will accelerate the determined, progressive ferment of thought on the role of higher education in America, and on the various means whereby this role may be played to the full. Here is a pattern of "implementation" which is as volatile and as unending as that conceived by the Commission when it said:

> . . . education is the making of the future. Its role in a democratic society is that of critic and leader as well as servant; its task is not merely to meet the demands of the present but to alter those demands if necessary, so as to keep them always suited to democratic ideals. Perhaps its most important role is to serve as an instrument of social transition, and its responsibilities are defined in terms of the kind of civilization society hopes to build.
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> . . . In the future as in the past, American higher education will embody the principle of diversity in unity: each institution, State, or other agency will continue to make its own contribution in its own way.[4]

This moral and intellectual autonomy then is the secret—if there is any secret—of the strength of American education. And the autonomy is made the more important by the richness and diversity it affords to our continuing and common search in all of the phenomena of man's physical and spiritual existence.

[4] *Ibid.*, I, 6.